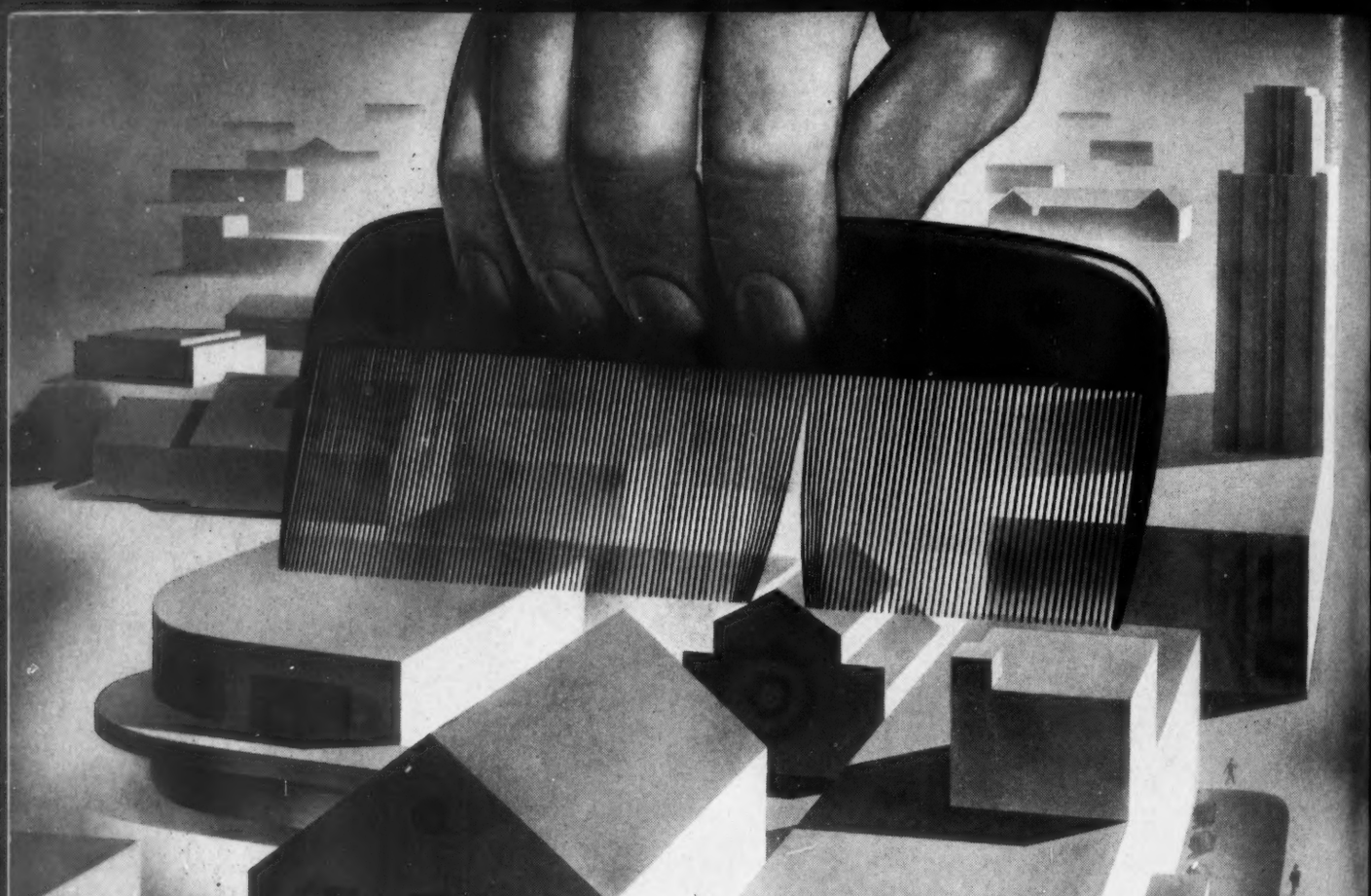
nitectural
Library

JUN 22 1944

Pencil Points

THE MAGAZINE OF ARCHITECTURE

June, 1944



From now on...Construction Quality gets the FINE TOOTH COMB

One of the lessons that is coming out of World War II is a new appreciation of quality . . . a new concept of value.

When normalcy returns to a war-rationed, value-conscious nation, people are going to want more than the latest wrinkle in heating, lighting and other major equipment . . . they'll take such improvements for granted. They are going to look for the *hidden* values . . . for the details that mean the difference between fine and mediocre construction.

This new demand for better quality in basic equipment is going to be right in line with the principles of lasting value that architects and contractors have always stressed. And it means that these principles are going to carry greater weight with the building public than ever before.

How well Jenkins Valves, with their reputation for outstanding excellence, fit into this new quality trend!

For 80 years, Jenkins Valves have been the choice of industry for the toughest assignments. They have also furnished the standards by which architects, engineers and contractors measure valve performance in public and business buildings, and in better-built homes. Time – and war service – have proved that Jenkins Valves have the *extra* margin of stamina to stand up longer, stay tighter and perform better.

In spite of this, your clients pay no premium for Jenkins quality. *Jenkins Valves cost no more than other good valves.* They cost so little more than cheap valves that the difference is only a tiny fraction of overall construction cost. Your clients get long-range savings and you build good-will when you specify Jenkins Valves! Good supply houses everywhere stock them.

Jenkins Bros., 80 White Street, New York, 13; Bridgeport, Conn.; Atlanta; Boston; Chicago. Jenkins Bros., Ltd., Montreal, London.

JENKINS VALVES

SINCE 1864

For Domestic, Commercial, Institutional and Industrial Service . . . in Bronze, Iron, Cast Steel and Corrosion-Resisting Alloys . . . 125 to 600 lbs. pressure.

U.S.A. Ralph Reinhold, President and Treasurer; H. Burton Lowe, Vice President and Secretary; Philip H. Hubbard, Vice President; Francis Turner, Vice President; Gilbert E. Cochran, Vice President; William P. Winsor, Vice President. Executive and editorial offices: 330 West 42nd St., New York 18, N. Y. Subscriptions payable in advance: 1 year, $3.00; 2 years, $5.00 in U. S. and Possessions, Canada, Cuba, Mexico, Central and South America;
...tion of occupation. Changes of address must reach us by ... for issue ... Include both old and new address. Articles, drawings, photographs, etc., submitted will be carefully considered, but the publisher will not be responsible for loss or damage. Copyright 1944, Reinhold Publishing Corp. Trade Mark Registered. All rights reserved. Entered as second class matter ... 25, 1944, at the Post Office at

Pencil Points
progressive architecture

June, 1944

Views: *Incidental to Building a Naval Base in Trinidad*, by Marion Davidson; *The Beaux Arts Institute of Design in 1944*, by Henry L. Kamphoefner, A. I. A.; Letters; Architects at War; Notices . . . . . beginning on page 8

News: Men and activities in the field of architecture; *Products Progress* . . . . . beginning on page 13

Reviews: Books, periodicals, bibliographies, beginning on page 20

Architecture Has Four Dimensions: Editorial, by Kenneth Reid 39

On Minding Our Own Business: Progressive Architecture: We re-state our aims 40

By Their Works Ye Shall Know Them: Testimony excerpted from the records of hearings before a Congressional Committee on results achieved by the National Capital Housing Authority, after challenges by speculative operators; prepared by the Editors; Henry S. Churchill, A.I.A., Consultant 44

Ten Pages of Good Architecture Selected from the Museum of Modern Art's Exhibition, "Built in U.S.A." 56

Stuyvesant Six: A redevelopment study by Marcel Breuer, A. I. A. 66

Building Product Facts: by Don Graf, A. I. A. 71

Perspectives: Antonin Raymond 73

American Red Cross Building, Los Angeles, Calif.: Sumner Spaulding, A. I. A., Architect 75

Selected Details 81

Pittsburgh Housing Authority Designs and Installs 296 Ceramic Heaters in Broadhead Manor: by Michael Rosenauer, F. R. I. B. A., A. I. A. 85

Measuring Density: A chapter from a technical study of urban population densities in relation to city planning, prepared by William H. Ludlow under the direction of Henry S. Churchill, A. I. A. 87

Manufacturers' Literature 90

Cover: Composition by Constantino Nivola

Editor-in-Chief:
Kenneth Reid

Editors:
Frank G. Lopez (Managing)
George A. Sanderson

Technical Editor:
Don Graf

Production Editor:
Olga Gueft

Cover, Layout, Typography:
Constantino Nivola

Publishing Director:
Phillip H. Hubbard

Business Manager:
John G. Belcher

Circulation Manager:
John Zellner

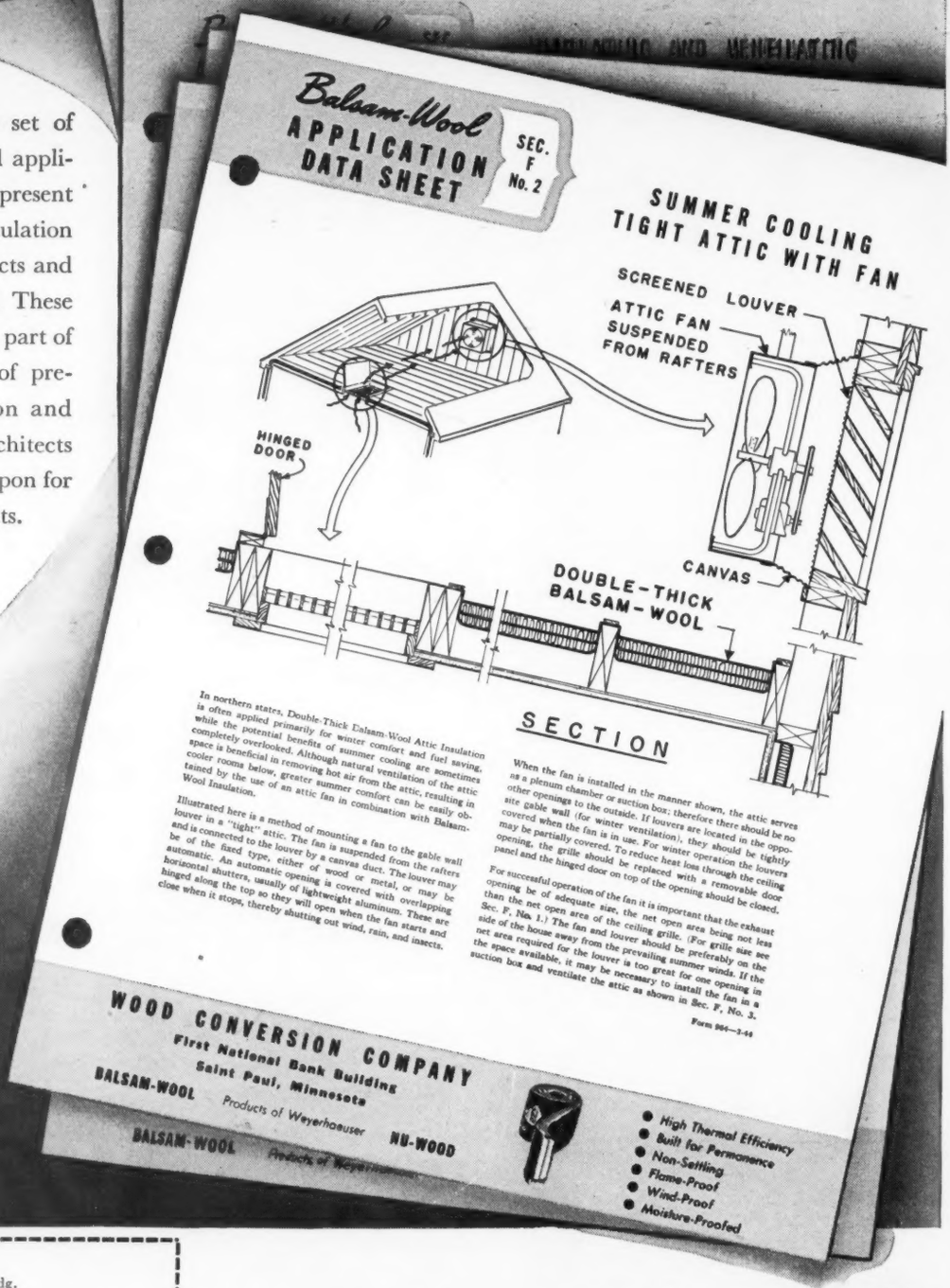
U.S.A. Ralph Reinhold, President and Treasurer; H. Burton Lowe, Vice President and Secretary; Philip H. Hubbard, Vice President; Francis Turner, Vice President; Gilbert E. Cochran, Vice President; William P. Winsor, Vice President. Executive and editorial offices: 330 West 42nd St., New York 18, N. Y. Subscriptions payable in advance: 1 year, $3.00; 2 years, $5.00 in U. S. and Possessions, Canada, Cuba, Mexico, Central and South America; 1 year, $5.00 in all other countries. Single copies, $1.00. Remittances must be by International or American Ex-

Postal or Subscription. Changes of address must reach us by 20th of month to assure receipt of next issue; must include both old and new address. Articles, drawings, photographs, etc., submitted will be carefully considered, but the publisher will not be responsible for loss or damage. Copyright 1944, Reinhold Publishing Corp. Trade Mark Registered. All rights reserved.

Entered as second class matter March 25, 1944, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Volume XXV No. 6, June 1944. Indexed in Art Index.

VALUABLE APPLICATION DATA PROVIDED BY Balsam-Wool

You'll want a complete set of these helpful Balsam-Wool application data sheets. They represent the latest research on insulation application . . . contain facts and details often hard to find. These application data sheets are part of the Balsam-Wool policy of presenting latest information and findings on insulation to architects and builders. Mail the coupon for your application data sheets.



WOOD CONVERSION COMPANY
Dept. 117-6, First National Bank Bldg.
St. Paul 1, Minn.

Please send me Balsam-Wool application data sheets. I understand there is no charge or obligation.

Name.....

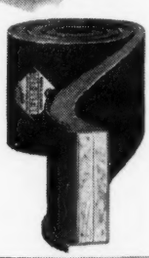
Address.....

City.....*State*.....

Balsam-Wool

SEALED INSULATION

1. WINDPROOF
2. MOISTURE-PROOFED
3. FIRE RESISTANT
4. LASTING
5. NON-SETTLING
6. HIGHLY EFFICIENT



BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD

ELECTRICAL EQUIPMENT

for the *Mammoth Plant* or the *Modest Building*

In post-war planning which involves expansion, modification or otherwise changing plant set-up or arrangement, the electrical system will doubtless require changes also. (FA) Engineers can be of great assistance in working out plans and specifications for economical and efficient service. Architects, engineers, and management are invited to submit their electrical problems — without obligation.

In the planning of new homes, stores, commercial or public buildings, or of remodeling existing structures, (FA) Products deserve consideration.

Load Centers and Service Equipment for homes . . . Panelboards for stores and commercial buildings . . . Switchboards — Feeder and Plugin Busduct distribution systems — Distribution Panelboards for power and light, for large and small plants . . . no matter what the requirements, (FA) can fill them . . . And (FA) Products are not only *approved* by Underwriters' Laboratories, Inc. They *exceed* the Laboratories' requirements.

Should standard (FA) Equipment not suit your purposes, we design and build equipment that will fit your specific needs.

More than fifty years of experience in keeping abreast or ahead of developments in the electrical field have given us the "know how". Use it to advantage — and without obligation.

Bulletins Are Available

on most of the (FA) Products listed at the left. Write for the ones in which you are interested — and for the name of the nearest (FA) Sales-Engineer . . . Frank Adam Electric Company, Box 357, St. Louis, Mo.

(FA) PRODUCTS

(FA) Busduct
Feeder and Plugin Types and Plugin Devices

(FA) Duct
for Wire and Cable

(FA) Panelboards and Cabinets
Standard, Column and Dust-tight Types with Switch and Fuse, or Circuit Breakers

(FA) Service Equipment
Standard or Special Switch and Fuse or Circuit Breaker Types

(FA) Switchboards
for Light and Power Distribution Switch and Fuse, or Circuit Breaker Types
Stage and Auditorium Lighting Control
Marine Switchboards

(FA) Shutlbrak Switches
Enclosed Safety Type

(FA) Knife Switches

(FA) Quikheters
Built-in or Portable

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

Views

Opinions from readers

Remarks from the editors

Changes of address

INCIDENTAL TO BUILDING A NAVAL BASE IN TRINIDAD

The following account of life in a United States construction camp was written by Marion Davidson, Engineer:

In June 1941 a friend exclaimed, "What! Trinidad? It's hot and it stinks. Don't go!"

Fifteen months later, then a Lieutenant in the Navy, this same friend visited our home on the United States Naval Base. Although only ten degrees above the equator, he discovered a delightful climate, which demanded blankets even in August, and that the savors of Trinidad were neither more numerous nor intense than in Yakima, Yonkers or Ypsilanti. His second trip completely convinced him that to be stationed there could be fascinating, except for missing a bride recently acquired in the States.

Mrs. Davidson and I enjoyed an enchanting, interesting way of life. We lived in a small house, one of a group constructed on the Base for the supervising personnel, swallowed in a delightful valley where the red howler monkeys roared at dawn from the "bush." These houses were identical except for the variable exterior colors. Built on stilts about ten feet high, each contained a living-dining room, kitchen, bath, two bedrooms, and a porch—locally a "gallery." Beneath this floor, on the ground level, was space for a station wagon or a pickup, a laundry, a storeroom, and a room and bath where Annie, our cook and maid, lived.

Annie was a "black-black" woman from Martinique. She spoke excellent French, classified me as knowing the words and "Madame" as having the accent. Her English, mixed with French, patois and West Indian expressions, was always a puzzle. "Fridge" meant refrigerator, winding the alarm clock was "giving it the chain," "icy-hot" was the thermos, and her periodical remark, "Madame, it has no bread" meant that the cupboard was bare. A large gold-toothed bridge in her "down teeth" was a constant concern to the household. When she "felt to eat" the contraption was removed, with the result that most of the time it was lost, and, as we had generously contributed towards the dentist's bill, it seemed part of the family possessions, with the contingent responsibilities of property protection. Often her apron pocket, the crushed stone beneath the house, or the lawn, produced answers to the treasure hunts. However, she was an excellent cook and would shame any New York chef. She knew the intricacies and secrets of French cookery, which were cunningly released by degrees during two years, because exposure of her talents might make more work for Annie. Her chutney made from mangoes equalled Major Gray's. She knew just the proper dash of bitters for a grapefruit, she swizzled rum cocktails to their ultimate heads, and she could prepare the native calaboo soup to such perfection that I became a devotee. Ordinarily I am not fond of soup. Another ability, not culinary, was the speed with which she could remove her shoe, strike an insect, replace the shoe and rarely miss a step or the insect!

Most persons seem to abhor crawling and flying things, yet more questions are asked by friends about the species in Trinidad than about any other subject. Some imagine that unless one eats a patty of butter immediately after delivery by a waiter, a mysterious winged bug will soar down and disappear with it. This is as exaggerated as a fisherman's catch, but it *is* possible to find a bird sitting on the foot of one's bed upon awakening in Barbados! During our initial weeks in Trinidad all the crawling and flying creatures of nature seemed to have congregated on the Island, but much is seasoned by time, for the majority soon went unnoticed and unmolested. Twice, iguanas about four feet long were killed in a tree in our back yard. A crapaud, a gigantic toad about the size of a bathroom scale, lived beneath our house. He was an excellent broad jumper who could compete with any champion except for the uncertainty of the direction of his jump. Two small lizards frequented our house hunting insects, while others of varying lengths were as plentiful outside as rabbits on an Indiana farm. Snakes, mostly boas, were abundant during the first year. A zoo was established in the laboratory, but a coral escaped from his jar and ended the zoo in the office. Of the three varieties of bats, only the noted vampire bat is a dangerous individual. The first description of this species came during my first week in Port-of-Spain, while reading a local book one night in bed. Completing the chapter on vampire bats at one A. M., I was convinced that the trees were filled with them and that a thousand eyes were watching a prospective victim under a mosquito net. On the Base the barracks and houses were screened and we slept soundly.

Life on the Base had other problems! Because of military secrecy, little can be written until later days regarding many interesting phases. It is an enormous undertaking to construct a Naval Base with its wide diversifications in our own country, but it is a stupendous problem to construct one in a jungle in a foreign land in time of war. Its success depends on building an organization which must supply the personnel with food, quarters, transportation, stores for clothes and the necessities of life, police protection, fire prevention, and medical attention; which must clear the "bush," build roads and bridges, handle and store thousands of tons of cargo, repair machinery; make furniture, do laundering, perform all types of engineering, quarry stone, and mix concrete, and establish spiritual and recreational facilities. In addition were the preparation of payrolls in a foreign currency, receiving employees, accounting for material and expenditures, and the administration of thousands of employees. Specialists had to be obtained to manage these departments. Many were continentals (United States citizens) who had worked in Alaska, China, England, France, Greece, dug gold in British Guiana, drilled for oil in Mexico, Venezuela, and Burma, and one who had dined with Hitler.

The first year was a period of pioneering—a period of licking the tangled hell of the "bush," mosquitoes, mud in the wet season, dust and fires in the dry season. The problem of understanding and adjustment between the continental personnel and the local workmen was complex. Although a British Crown Colony with English the common language, terms and expressions in Trinidad are very foreign to our way of speaking. Who could be expected to interpret "give me a drop, boss," "go for eet" and "mopsie" as meaning "give me a ride, boss," "run for it" and "sweet mamma," or what continental could understand "tea" as "breakfast," "breakfast" as "lunch," and "marino" as "undershirt," until a basis of mutual understanding was established? Many British West Indian employees had to be instructed in the use of our tools, the operation of machinery and heavy equipment, and taught American construction terms. These were so unusual to them and so terrifying that women and children wept as the first caterpillar tractor passed on its way to the site. They were so unusual that when rubber boots were purchased so work could be accomplished in the water, the natives waded in to a depth above the boot tops. Due to daily increase in personnel this same instruction, same guidance, same patience continued through seven days a week for almost two years.

By far the majority of these employees performed magnificent work. While many Calypsoes were written in jest about the "Yankee dolla'," certainly there was a definite desire on the part of many to do their duty, to improve and cement the relationship between the two nations. My office was filled during the last two days in Trinidad with Chinese, East Indians, whites and blacks, conveying to me their good wishes that I might "shade under the palm branches of good health."

(Continued on page 10)

....FOR THE BUILDINGS TO BE CONSTRUCTED TOMORROW

Now is the time to make farsighted plans for the new buildings which will meet the post-war development of your community. Experience has proven that foundation investigations are a necessary part of all economical engineering planning because nearly all foundation difficulties can be traced to inadequate programs of sub-surface exploration.

For nearly half a century Raymond has supplied invaluable information about sub-surface conditions beneath a proposed construction site by two methods: (1) Driving a specially designed sample spoon into the earth through a guide casing and obtaining characteristic samples in what is practically their actual existing state and (2) Boring through boulders, hardpan, etc., to locate elevation of rock and obtain cores thereof and recovering cored samples. The Raymond report includes a complete log of soils encountered, geological classifications, water levels and other pertinent information, including carefully preserved samples.

Such data may indicate extensive changes in design, but the opportunity to make them in the planning period is much preferred to the necessity of making them in the field or on a completed structure. Write, wire, cable or 'phone for a competent Raymond engineer to discuss your proposed projects with you.

RAYMOND
CONCRETE PILE COMPANY

Branch Offices in Principal Cities

140 CEDAR STREET • NEW YORK 6, N. Y.

SCOPE OF RAYMOND'S ACTIVITIES includes every recognized type of pile foundation – concrete, composite, precast, steel, pipe and wood. Also caissons, construction involving shore protection, ship building facilities, harbor and river improvements and borings for soil investigation.

Views

(Continued from page 8)

By far the majority of our continental employees, also, performed magnificent work. Many had left the States prior to the declaration of war; many of these remained for two years without leave, without seeing their families and sons who entered the military service. They were conscientious, patriotic, and realized the strategic importance of the Naval Base in Trinidad to the protection of the Panama Canal and to the interests of the United States. These men and the pioneers who came in the beginning, in my opinion, deserve the credit for the award of the first Army-Navy E Pennant granted to a Base in the Atlantic, and contributed in no small measure to the war effort of our country.

The period of construction of this Naval Base in Trinidad was the most aggravating, exhilarating, fascinating and interesting experience of a lifetime. Long hours and hard work were mixed with pleasant surroundings and humor. What more can one wish?

HORSE, VICTORY MODEL

With none of the manners or style of show breeds, this horse from the cow country is symbolic of war days, when men and animals are judged by what they do, not by how they look. He is intelligent, compactly put together, well muscled, built to carry a rider through the miles of a long day.

He is a good deal like the Victory model Von Duprin devices, which are made for just one thing . . . to do a hard job well! Built of tough malleable iron, these Von Duprins are sturdy, safe, reliable. In any emergency, under any conditions, they will let the people out of your buildings. They are, in very truth, real Von Duprins.

THE BEAUX ARTS INSTITUTE OF DESIGN IN 1944

By Henry L. Kamphoefner, A.I.A.

The Beaux Arts Institute of Design has been the whipping boy of architectural education for the last dozen years. Criticism against it has been carping. The noses down which it has been looked have often been on the heads of men who do not know what the Institute is now doing. It is time to re-examine the Beaux Arts Institute of Design and to evaluate its worth and influence.

Many critics believe that Beaux Arts students continue to render the orders meticulously. Many believe the design principles of the old French school of tradition-forced symmetry and facadism still control its work. I recall an incident of my undergradute days when I tried to "design" something on one of the old analytiques. My professor asked me what precedent I had for my effort. I told him, "None at all. Do I need a precedent?" Even students who made no pretense of being Wrights or Neutras found that creative effort was too often smothered under the cloak of "good taste," which often meant nothing but adherence to precedent and stodgy tradition. Fortunately for architecture, that attitude is now departing from Beaux Arts work. I think the rebellion from eclecticism started with the students, spread to the faculties of the schools and finally was felt by the juries of the Institute. It has never been a tribute to the profession that the most progressive work comes almost without exception from its younger members who have recently graduated from the schools. Many encouraging changes have followed the Institute's abolition of the analytique in 1935. The latest progressive step is the introduction of the so-called "Free Problem."

The program for the Free Problem gives only the type of building to be designed by the student and a basic or philosophical discussion of the fundamental requirements and needs for such a building. The student then is asked to select an actual site that he is familiar with, perhaps in his home town or the town where his college is located. In the case of the current year's first Free Problem for the Junior class, a small library, the students in the University of Oklahoma made a thorough, scientific study of the town for proper choice of site. They considered population density, location of schools, relation to University library facilities, position of lower class residential units and other vital factors. They evaluated their data in selecting from various available sites. It is true that this problem technique has been used for a number of years in some of the larger graduate schools, but the stimulus of national competition provided by the Beaux Arts Institute is lacking there. Watching the jury evaluating the Free Problems I found that they had to consider solutions which varied according to the manner in which students in different parts of

(Continued on page 92)

A $10 million speculation, in the form of a 12-story, industrial building whose 4-acre flat roof, 144 ft. above the street, is to be used as a landing for helicopters, is planned on the site of the old New York Central Railroad in New York's lower West Side.

Tishman Realty and Construction Company, planners, expect the structure to win back some of the industries which have moved to other sections because of lack of proper facilities in Manhattan; they say construction will be started within 60 days after the War Production Board lifts restrictions; it is reported that already a large number of merchandising concerns have made overtures for space. It is to be called the Building of Tomorrow; each floor is to have a spread of 400 ft. in each direction, making it the only building of such dimensions in the city; huge elevators will lift trucks loaded with freight from the street levels to any floor in the building, thus eliminating traffic congestion in the streets; it is claimed that, when in operation, the building will have a daily population of 35,000.

A building code standard, which can be used by cities and towns all over the country, has just been approved by the American Standards Association.

Its purpose is to provide for a suitable form of organization for building departments and for efficient administration of building code work. The standard was developed under technical leadership of the American Municipal Association and the Building Officials' Conference of America, Inc. It aims at uniform building regulations throughout the U. S.; recognizes new materials and new construction methods expected to be important in the postwar period; it provides for adoption of rules by building officials to supplement statutory provisions permitting the building code to be kept up to date without amending the code each time a nationally recognized standard is revised. *The Administrative Requirements for Building Codes* (A-55.1-1944) may be obtained for 35 cents a copy from the American Standards Association, 29 West 39th Street, New York 18, N. Y.

The finished reconstruction plan for the "blitzed" city of Plymouth, England, is said to be the first comprehensive attempt to solve all the riddles facing planners of the future perfect city.

The scheme, which would have been inconceivable 5 years ago, offers broad highways, green belts, parkways, recreational spaces, a smooth-running traffic system, no blighted areas, a civic precinct to contain all municipal buildings, a shopping precinct, a cultural precinct. St. Andrew's Church, now a shell, is to be rebuilt in the foreground of these precincts. However, it is stated that even if it becomes Britain's model city in a few years, it will retain all its links with the history of the Middle Ages, for every vestige of ancient Plymouth, with its Tudor enclave, is to be preserved in the midst of its modernized surroundings.

20 years ago North American private capital, represented by a Chicago banking group, was invested to provide public works facilities in the South American city of Barranquilla, Colombia.

The group financed management, construction, and operation under direction of a North American engineer, Samuel L. Hollopeter, in return for which the city agreed by contract to set up an autonomous board to manage all properties and collect real estate taxes and other funds to amortize bonds and pay interest charges on the loan—the board to consist of three men, a bank-appointed engineer, a member of the City Council, and a member of the local Chamber of Commerce.

In the early 1900's, Karl C. Parrish, a North American, became convinced that Barranquilla had great commercial potentialities and in 1919 he abandoned his mining activities in the Colombian *Cordillera* to purchase a large tract of city land for residential development. After enlisting Barranquilla's citizens in a program of civic improvements, he went to a Chicago banking syndicate to obtain the money to finance it; he came back with a 2½ million dollar loan. Under the unique contract set up, the surplus was to go into the city treasury after payment of loan service, operating expenses, and depreciation reserves. Today Barranquilla has completed more than $7 million of facilities; the city treasury has been receiving an average annual contribution of $100,000 from their operation, and the net debt is only $2 million. Because of its excellent facilities, Barranquilla is said to rank today as one of the best-operated cities to be found anywhere in the tropics.

Such an accomplishment demonstrates a workable arrangement whereby foreign investment funds have been geared to meet public welfare needs in a South American city, and one measure of its success is evidenced by the fact that the contract agreement has been in effect for almost two decades.

The Producers' Council says there ought to be laws, and is promoting:

The passage of state legislation to encourage large apartment house investment as a means of assuring the construction of a maximum number of new postwar family housing accommodations; revision of federal tax laws to permit expenditures for architectural and engineering services, thereby speeding up incentive for advance planning of needed postwar construction by business concerns.

New York State is having trouble in publishing a report on postwar public works.

A reprint from the March 22nd *New York State Taxpayer* states: "Availability of the annual report of the Temporary Commission for Postwar Public Works Planning was awaited so that the status of postwar public works planning in New York State could be determined. Efforts to keep a running summary of the projects approved by the Commission have failed, due to deviations from the public listings." It is stated that project cancellations were made by localities themselves, even after Commission approval for planning aid.

The Commission had issued a summary of Approved Projects as of February 1, 1944, which was, it is claimed, not a comprehensive report on the status of postwar plans. Total of plans covered was $72,000,402 for upstate municipalities, $22,677,961 for the state; the $35,000,000 for N. Y. City, contained in a separate report, brought the grand total to $129,678,363. Plans which the Commission's field representatives had found "hundreds" of municipalities were keeping under cover to avoid "publicity" or "political" fights, will not be shown in the promised summary of the annual report to the Legislature.

General Grant is leaving the OCD.

In conformity with the wishes of the President, according to a notice from the Office of Civilian Defense in Washington, the War Department on April 3rd relieved General U. S. Grant, 3rd, of his assignment with the OCD, so that Gen. Grant may be assigned to full time service with the National Capital Park and Planning Commission, of which he is chairman.

The World Fashion Center plan for New York City has gained strong support from dry goods merchants in all sections of the country.

Grover A. Whalen, chairman of the Mayor's Committee, says so, and adds that the scheme may be presented at the opening session of the National Retail Dry Goods Association annual convention to be held June 12th at the Hotel Pennsylvania in New York.

A Committee on Reinforced Concrete Research, under direction of R. R. Zipprodt as research and consulting engineer, has been set up by the American Iron and Steel Institute to begin a basic study of uses of steel bars for concrete reinforcement.

Studies have shown the extent to which serious gaps exist in the technical data which form the basis for design regulations and specifications. Research programs are to be initiated to develop new test data or supplement existing data, as follows: problems related to proper design of square and rectangular footings; investigation of permissible unit stresses to be used in the design of reinforced concrete slabs and beams to

News

Design and construction

Developments afield

Building Regulations

Related Professions

Products Progress

News

determine extent to which ratio of slab thickness to span affects unit stresses in the slab and consequently its deflection; also the extent to which the span of slabs or beams should be limited by size or type of reinforcement used; investigation of the effect of plastic flow. Classification will be attempted of all types of deformed bars which may be developed as a result of the concrete reinforcing bar industry's plea to develop a standard or universal type of deformed bar.

If the research results in technical data which warrant changes in existing building or design regulations, it is proposed to present such data to recognized code- or specification-writing bodies.

Building costs continue to soar in spite of limited activity and ceilings on materials.

So states Myron L. Matthews, executive vice president of The Dow Service, Inc. A Dow Service tabulation, intended only for general purposes, gives annual average computations as follows: PERCENT INCREASE APRIL 1944 OVER EARLIER YEARS (All increases except for 1920)

1943—	1.5%	1927—	10.0%
1942—	3.0%	1926—	9.0%
1941—	9.8%	1925—	10.0%
1940—	13.8%	1924—	5.8%
1939—	15.8%	1923—	7.7%
1938—	15.8%	1922—	29.0%
1937—	18.0%	1921—	12.7%
1936—	36.6%	1920—	9.0%
1935—	38.1%	1919—	15.5%
1934—	43.6%	1918—	20.0%
1933—	76.3%	1917—	25.6%
1932—	47.7%	1916—	69.4%
1931—	30.1%	1915—	148.4%
1930—	10.0%	1914—	154.2%
1929—	9.0%	1913—	127.7%
1928—	10.0%		

It is stated that the application of this table shows it would cost about 30% more today to rebuild the 1918 building with material of like kind and quality. Dow forecasts, admittedly with hazard, that it believes building costs will increase another 10 to 15% net, during or after the war, with periodic crests and troughs, before the net trend is decisively checked or reversed.

Data on plastics reinforced with glass fibers have been developed by the Materiel Command of Wright Field U. S. Army Air Forces and by the research laboratories of Owens-Corning Fiberglas Corporation for structural parts of aircraft.

These plastics are said to have high strengths combined with low weight, much below aluminum; their laminates lend themselves to slender forms, to light-weight construction, rounded contours, sweeping and reversed curves, and to "streamlining" generally.

The Architects' Committee for American Soviet Friendship has issued a statement of its purpose:

To bring the professions of the United States and the Soviet Union closer by developing an understanding of each other's background and present problems, thereby creating a basis for constructive cooperation after the war. There is to be an interchange of data on professional organizations and their aims, standards, and practices, on architectural education and technical trainings, leading eventually, according to present plans, to exchange visits by architects, engineers, technical personnel, and students. The committee has already begun work on two introductory survey exhibits, one on American architecture for the Soviet Union, and one on Soviet architecture and planning for the United States. Suggestions and requests for information should be addressed to the Committee at 232 Madison Avenue, New York City 16, N. Y.

A Construction Industry Advisory Group has been set up in the National Chamber of Commerce by construction industry leaders to guide the coming change-over from war to peace.

They believe construction needs specific and concrete help from other lines of business, from prospective home owners, from government agencies; that it needs private and public work put into blueprint form ready to go forward when war permits.

Philip M. Klutznick, former NHA assistant administrator, has been appointed by President Roosevelt to succeed Herbert Emmerich, retiring Commissioner of FPHA.

Emmerich's resignation brought from NHA Administrator Blandford a letter stating that Emmerich "had more than tripled production of war housing, reaching a peak of more than 1000 units a day," that he had found ways to save 80% in critical materials, and saved at least $400 million in public funds. Mr. Klutznick faces the task of completing the war housing program and supervising management of projects which will ultimately shelter at least 2 million persons.

Roland R. Randall, Chairman of the Philadelphia Housing Authority and a Vice President of the National Association of Real Estate Boards, came out strongly for public housing at a meeting of the Citizen's Housing Council in New York on May 23rd.

He decried the controversy between the public housers and private housers and stated as his firm opinion that subsidized public housing is an absolute necessity to take care of the people who cannot afford to pay an economic rent. Only when public housing takes proper care of this low income group is it possible for private housing to go ahead with projects for higher income groups with the assurance that their investments will not be blighted by the growth of slums.

"Public housing," said Mr. Randall, "is absolutely necessary." You may think of it as a necessary evil or as a necessary blessing, but you have got to recognize that it is necessary."

Mr. Randall's statement was hailed by Hugh Pomeroy, Executive Director of the National Association of Housing Officials, as the most statesmanlike utterance by a real estate man that it has ever been his pleasure to hear.

New York's City Council's vitality recently won out over its dignity.

That Chamber has adopted a local law (now on its way to Mayor LaGuardia for approval or disapproval) which would prohibit tax-exempt housing projects from denying "dwelling or business accommodations" to anyone because of race, color, or creed. The bill provides for removal of tax exemption 60 days after the Supreme Court finds that "discrimination is being or has been practised," but allows the exemption to stand *if discrimination is ended within the 60 days* (*our italics*).

The ensuing storm of arguments caused Council President Newbold Morris to threaten recommitment of all the bills, warning that no good was being accomplished. Two vote-decliners, Mrs. Genevieve B. Earle, Republican, and Councilman James A. Phillips, Democrat, spoke their minds. Mrs. Earle stated, with tears in her voice, that the bill would "block vast benefits to the city of slum clearance by private funds" and would "deny to thousands of people in this city any hope for decent, sanitary, and civilized living conditions for years to come." At the same time she urged, *instead* of an "inflexible law," formation of a committee representing the city, insurance companies, and savings banks to seek housing agreements agreeable to all.

Councilman Phillips stoutly denounced "hypocrisy and cant," saying there were two outstanding divine commandments: "Love God" and "Love thy neighbor." He said he lived "that way and I claim you can't legislate that way . . . This business of dangling discrimination and tolerance on a string for the purpose of swaying votes is one of the most diabolic things in American life today, and I hate like hell to be put on the spot." (We suppose that multitudes of New York City's citizens are swayed by such bait when it is temptingly dangled before them; and deep down inside us we applaud Mr. Phillips for his honesty. But we can't help wondering whether he subscribes to the Red Cross and other agencies—as he must—wholly because he wants to; or whether he is at all swayed by the fact that such donations are deductible from income tax.)

When former Alderman Victor P. Sahner of Flatbush managed, during a lull, to achieve recognition from the Chair, he was welcomed by Majority Leader Joseph T. Sharkey, another former Alderman, with: "You'll find we make up in vitality what we lack in dignity."

More housing is contemplated by insurance firms.

The Institute of Life Insurance reports that many of the leading insurance companies are already laying plans to invest in new large-scale housing projects—to be specific, they "see hope for" beginning work on another $100 million of housing by insurance firms within 6 months after the war; plans for big moderate-rent apartments in six cities after the war have already been drawn and will involve rebuilding of slum areas in leading population centers.

ASPO EXPECTS TO BLUEPRINT DREAMS

The "actual planning meeting" of the American Society of Planning Officials, held in Chicago May 1-3, was attended by more than 300 representatives of many cities, the cities being classified into three groups—those of over 300,000 population, those from 300,000 to 50,000, and those under 50,000. Keynote of the meeting was sounded by ASPO's president, Wilson W. Wyatt: "For the past 12 months the phrase 'postwar planning' has been on the lips of almost every American . . . reams have been written, millions of words spoken; too few blueprints have emerged . . . And the time for planning to be brought into execution grows nearer every day . . . It is futile to hope for a better world unless we can prepare for better communities, not merely bigger cities . . . The same vision and daring and soundness in planning required to win this war will also be necessary to win the peace . . . Postwar planning . . . is hard-boiled realism . . . We must be prepared with a shelf of public works, carefully selected, soundly conceived, and in the blueprint stage . . . it is not enough to have a list. The plans must be drawn, the engineering completed, and the specifications spelled out . . . The time for talking has passed. This is the time for action."

General highlights:

Cities, counties, and states recognize the importance of planning now and are willing to spend considerable sums of money to get plans under way. These are plans for general community and state development and specific plans and specifications for postwar building.

Planning is so important that cities and states are seeking the most competent persons who are available for that work in the United States. Political considerations are of little importance; residence requirements aren't considered.

There was general agreement that mere lists of public works projects are of little value. Every community must have some understanding of what the community has been and what it can be. This involves consideration of its economic and industrial future, as well as consideration of social needs.

Whereas some cities and states have made considerable progress in the development of community and state plans and in the preparation of specific plans for particular projects, we have a long way to go before we can be ready.

There was agreement also as to the comparatively small part public works will play in the country's economy. The first test of a public work is its need in the community. The second test is how much employment it will provide.

Specific highlights: New York City

New York City's was the largest postwar progress report, made by Lawrence M. Orton, who stated that cost of the program would approach 1 billion 5 million dollars. He reports that, with existing tax and financial framework, the city can finance about half the program; with a federal or federal-state public works program, it can proceed with the entire plan, which would provide 18 months' work for 250,000 men.

Los Angeles

Los Angeles was reported by its planning director, Charles B. Bennett, to be expecting one of the most serious unemployment situations in the country when war production ends, because so many of its present workers are employed in aircraft and shipbuilding plants. Federal officials are said to consider the Los Angeles area as the "Number One Hot Spot in the United States" with respect to housing shortage. City authorities have prepared a $707 million list of postwar public works projects but very little, it is reported, has been done to carry this list beyond the tabulation stage.

Detroit

Detroit, because of the virtually complete conversion of its automobile industry to war production, expects an equally grave situation. George F. Emery, of the Detroit City Plan Commission, reports that Detroit has prepared a program of $247,577,000 in useful public works, with plans completed for 39 projects totaling $36 million. Plans for 40 projects to cost $119 million are on the drafting boards, while $92 million worth of work is scheduled for early attention.

Cincinnati

Cincinnati is reported by Alfred Bettman, chairman of Cincinnati City Planning Commission, to have over $10 million worth of public works plans in the blueprint stage; a master plan is being prepared and a regional council organized to expedite the planning. A $100,000 appropriation has been made available to carry on the work, with the city council promising to appropriate as much again when needed.

Toledo

Toledo's Metropolitan Plan Association and Regional Planning Association are reported to have become active and effective during the past two years and are going ahead with sketches, diagrams, facts, etc., to be taken eventually before other specific groups for recommendation, to establish public opinion for proper support. Charles E. Hatch, Toledo and Lucas County Planning Engineer, states: "It is contemplated that with such backing the various public agencies will immediately be forced, if you please, to acquire the land necessary for the public program which it is hoped will be in operation immediately at the close of the war . . . Along with the program of public works, consideration is being given and recommendations will be interlocked so as to interest private capital, private projects, or private developments." A planning budget of $45,000 per year is estimated.

Cleveland

Cleveland reports plans, revisions, and research data in process on land use, urban rehabilitation, housing transportation, etc., all adding up to a "sound city planning program, developing slowly on a solid base of citizen participation, for the City of Cleveland," and "a less organized planning program for Metropolitan Cleveland, developing still more slowly but with genuine hope of eventual effectiveness." The positive statement is made: "The plans we are maturing in Cleveland are of the indigenous kind that can and will be carried out."

Milwaukee

Milwaukee's technical Committee of Public Works has prepared a 6-year program of civic improvements based on the pay-as-you-go principle, reports Alvin C. Bromm, city planning director. Legislation enacted last year provides for a permanent improvement fund permitting funds to be carried over from various governmental departments. He further states that, without need of a bond issue, Milwaukee now has scheduled a $22 million postwar public works program, one-half covering city-planned projects and over one-third of these now in blueprint stage.

Syracuse

Mayor Thomas E. Kennedy reports that the "Syracuse Plan is the plan of the people of Syracuse, and we can be sure that the people themselves will carry out those plans or know the reason why." He believes that the people will always make the right decision if they are fully informed on all sides of the problems facing their community. The City's Public Participation Committee of the Postwar Planning Council worked out methods of presenting civic problems to the community by means of newspapers and radio stations, stressing that "controversy in the early stages of planning clears the air, gets all the divergent viewpoints in the open . . . and controversy makes news; thus the newspapers become natural partners of the enterprise to develop public awareness of the things that are wrong and the ability of the ordinary citizen to do something about them."

Louisville

Louisville adopted a $90 million master plan last spring and now in blueprint stage are plans of new $750,000 coagulation basins. According to Carl Berg, planning engineer for the city of Louisville and Jefferson County, the city's most serious problem is that of adequate sewers, pumping stations, and a sewage-disposal plant, for which preliminary plans have already been drawn. He also reports that the city expects an addition of 36,000 permanent residents after the war over the prewar population, for which housing must be provided.

Kansas City, Mo.

Kansas City, Missouri, is ready with a $15 million public works program, according to John M. Picton, chief plan-

(Continued on page 114)

News

Products Progress

Pyro-Welded High-Frequency Material

Laboratories of the International Products Corporation, 2554 Greenmount Ave., Baltimore, Md., announce the development of Pyro-Plastics "PemQue," an inorganic pyro-welded material designed for insulating purposes in the field of electronics in high frequency requirements, and is claimed to be impervious to moisture, to possess dependability under stress, and to have high resistance to mold and fungi growth.

Ballasts for Fluorescent Fixtures

General Electric Co., Schenectady, N. Y., announces a new line of Tulamp 40-watt ballasts housed in streamline,

drawn-steel cases designed for external mounting above the fixture with leads out the bottom of the ballast case.

Legimeter for Blueprints

The "Legimeter" is a device for predetermining whether or not a drawing will reproduce satisfactorily while still in the draftsman's hands, or in the case of older drawings, before they are sent to the blueprint machines. It is a two-panel illuminated table, one panel with sample drawings from which satisfactory prints have been made by the Army and Navy as standards of minimum satisfactory contrast, the other a clear, ground glass sheet on which to place the drawing to be evaluated. Both panels have the same intensity of illumination, the accuracy of the evaluation assured by the fact that the comparison is made by transmitted rather than reflected light—the same medium used in actual making of the blueprint. The "Legimeter" includes additional devices in a 3-panel backboard for instruction and training of inexperienced draftsmen. Douglas J. Wishart, engineer of Glenn L. Martin Co. of Baltimore, Md., was inspired by the shortage of draftsmen to this invention.

Wall Finish

An interior flat wall finish, an oil paint that is claimed to seal, prime, and finish in one operation, is applicable over wall board, plaster, concrete, wood, brick, cinder blocks, that dries dust-free in a few hours and hard overnight, is "Horn-O-Tone S-P-F," put out by the A. C. Horn Co., Building Materials Division, 43-36 10th St., Long Island City, N. Y.

Partitions

A new type of non-load bearing, non-inflammable partition construction, requiring wood only for small runner strips and few nails, is announced by the United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill., as a time, money, and space saver. Plastered surfaces on each side of the material may be decorated. The partitions are approved by government agencies and have been used on some of the largest housing projects.

Pressed Plate Sections

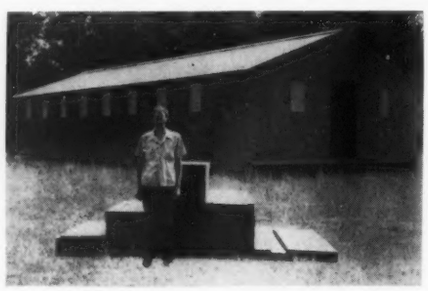
Fort Pitt Bridge Works, Pittsburgh, Pa., offers intricate pressed plates (up to more than 6'x¾" thickness) claimed to be always accurate in dimension, without damage to the metal grain structure, uniform in shape and alignment, in any length up to 36 feet, and making possible a wide variety of special fabricated shapes. In addition, it is stated load-carrying plates formerly requiring stiffening can be pressed into load-carrying shapes with a saving in weight as well as fabrication.

Instant Starting Fluorescent Lamps

A new quick-start ballast, available in dual 40 watt size for two-40 watt fluorescent lamps, in end-lead or bottom-lead designs, is announced by The Acme Electric & Mfg. Co., Cuba, N. Y. It is claimed to operate from standard 115/120 primary circuit, boosting the voltage to approximately 450 volts for lamp starting, with no loss in lamp life.

Fabricated Plywood-Plastic-Metal Panels

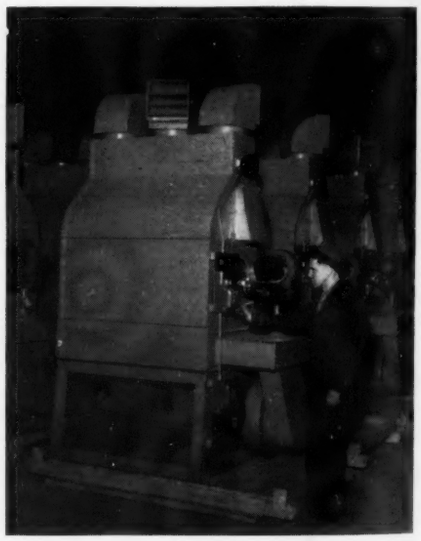
United States Plywood Corporation announces a new technique of construction utilizing factory-fabricated plywood-plastic metal panels retaining outstand-



ing properties of each material, known as "Armorply." Advantages claimed: serves three purposes, framework, sheathing, exterior siding or roofing; can be factory-fabricated in required sizes, shipped flat in small lightweight shipping space to plant or site; makes buildings proof against rodents, insects, and termites; permits 50% less use of wood; the more stable frame reduces maintenance problems of applied finish material; can be used as stud, sheathing, and exterior finish, as rafter, sheathing, and exterior roofing, as joist and subflooring; can be fabricated into light structural girders. Characteristics are developed through routing or grooving which sever plywood along predetermined lines, permitting otherwise rigid panels to be bent or flanged along these lines, thus achieving the third dimensional member which accompanies the trussing or support required of framing. The metal surface acts as a tension member while the basic plywood panel becomes a compression member. For walls and roof the metal face is always on the exterior and will not corrode or rust, and may be painted or pre-finished; metal roofs could be stainless steel or copper. The Corporation announces it will not enter the building field, but will restrict itself to the manufacture of products in sheet form.

Direct Fired Heaters

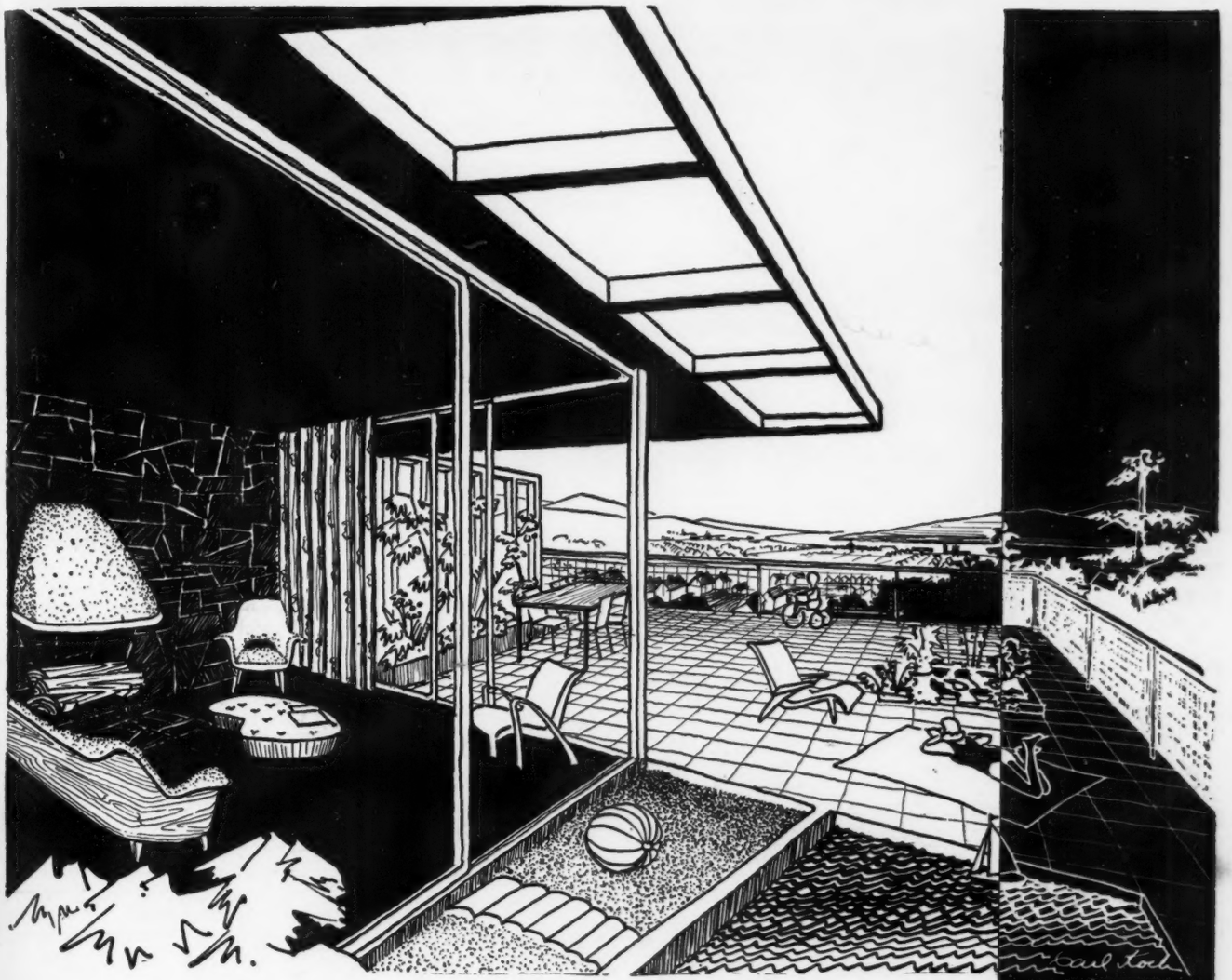
To meet the problem of heating small structures and providing additional heat for limited areas, Dravo Corporation has developed a small direct fired heat-



er with capacity range from 300,000 to 850,000 Btu output per hour. Its overall size has been reduced so that floor space requirement is 5¼'x3'; it can be suspended from the wall where floor space is unavailable, can be equipped to burn gas or oil; is thermostatically controlled.

Calculator-Protractor

Designed to help the home craftsman solve puzzling woodworking problems, the "Handy Calculator" (also a protractor) is available to all workers with wood through a special wartime offer by Greenlee Tool Co., 2136 12th Street, Rockford, Ill. Board feet can be converted to linear feet; slope per foot, comparative hardness, weights, shrinkage, warping, and ease of working of various woods can be found. Bit sizes for head, body, thread of standard screws, nail specifications, tips on tool sharpening are included.



DWELLING IN 194X

Significant of the most advanced thinking in functional design, this post-war dwelling project is the latest in the Barrett series of original conceptions by outstanding American architects demonstrating the practical utilization of valuable roof space so largely wasted in today's buildings.

Shown here is a livable and efficient roof plan for a medium-priced dwelling as designed by Carl Koch, senior Research Technician for the National Housing Agency, and authority on cooperative housing.

Visible in this study are an "outdoor" living room for year-round use, a play yard, wading pool, sun deck and garden—all in the roof plan alone! And all—in this case—high enough above the landscaping to provide unobstructed views.

The area on which the dwelling stands has been transferred to the top of the structure, thus adding the equivalent of the entire ground floor to the usable dimensions of the property.

Barrett Built-up Roofs—already standard for flat-roof construction on many modern developments, such as the famous Rockefeller Center roof gardens—are increasingly important to architects and housing planners. These coal-tar pitch and felt roofs provide the maximum in dependable, long-lasting waterproofing and weather-proofing protection.

* * *

The dwelling shown here is sixth in the Barrett series of American designs devoted to the functional planning of roof areas. You are invited to write today for reprints of the complete series, for your files.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

2800 So. Sacramento Avenue
Chicago 23, Ill.

Birmingham
Alabama

In Canada: The Barrett Company, Ltd., 5551 St. Hubert St., Montreal, Que.

Barrett Specification* Roofs

*Reg. U. S. Pat. Off.

Reviews

Books

Periodicals

Bibliographies

Technical Books

Aircraft Drafting

Aircraft Detail Drafting, by Norman Meadowcroft, Service Engineer, Douglas Aircraft Company, formerly Training Supervisor. 6x9, 211 pages, illustrated. McGraw-Hill Book Co., Inc., New York, N. Y. $2.25.

This is a practical, self-help text on aircraft detail drafting, said to be the same training given Douglas Aircraft Company workers. Examples from aircraft construction and assignments of making production drawings of typical airplane parts are shown.

Costs

Construction Estimates and Costs, by H. E. Pulver. 6x9, 653 pages, with diagrams and tables. McGraw-Hill Book Company, Inc., New York, N. Y. $5.00.

This manual takes up each element of construction work separately, describing and illustrating simple arithmetical methods of cost estimation, and covers excavations, all parts of buildings, concrete, structural steel, material transportation, profit, overhead, etc., and is aimed to give contractors and engineers a key to better profits and closer, safer bids through more accurate construction cost estimates.

Engineering, Structural

Elementary Structural Engineering, by L. C. Urquhart and C. E. O'Rourke. 6x9, 348 pages, 204 illustrations. McGraw-Hill Book Co., Inc., New York, N. Y. $3.00.

Presentation of design of beams, trusses, columns, footings, supplementary information on theory, design requirements, nature of materials, working data, etc., is made in this manual for mechanical and electrical engineers, civil engineers not specializing in structures, and architects who wish a working knowledge of this field. The book includes explanation of basic principles of structural mechanics, various methods of computing beam and truss deflections and their applications, theories of design of structural elements, detail of fundamental principles of design of connections and splices for simpler structures.

Formulae, Strength of Materials

Formulas for Stress and Strain, by Raymond J. Roark. Second Edition, 366 pages, illustrated. McGraw-Hill Book Company, Inc., New York, N. Y. $4.00.

This handbook contains results of analytical and experimental work on strength of materials, with extensive formulas, data, and tables for stress, strain, and strength useful to the designing engineer.

Foundations

Foundations, Abutments, and Footings, compiled by a Staff of Specialists; Editors-in-Chief, George A. Hool and W. S. Kinne. 6x9, 417 pages, 178 illustrations. McGraw-Hill Book Co., Inc., New York, N. Y. $4.00.

Contents of this book cover types of engineering of foundations—footings, piers, land, and underwater—describing each type of structure, its suitability for various purposes, factors of design, design methods, construction pointers, to aid engineers and construction men. There are sections on soil investigation and excavation, and even a chapter to help the engineer avoid legal pitfalls.

Handbook, Brickwork

Handbook of Brick Masonry Construction, by John A. Mulligan. 6x9, 526 pages, 163 illustrations. McGraw-Hill Book Co., Inc., New York, N. Y. $5.00.

Information on estimating and erection of brick masonry work, useful to architects, contractors, masons, and others, is set forth in this book, covering all types of work performed by bricklayers and every type of material handled by them, data on manufacturing, properties, and advantages of materials, and methods and tables on materials and labor requirements to aid in estimating.

Helicopters

The Helicopters Are Coming, by C. B. F. Macauley. 4⅞x7⅜, 165 pages, illustrated. Whittlesey House. $2.00.

The leap from the question, "What is a helicopter?" to statements on "requirements for city helicopter terminals" is undertaken in this discussion of helicopter research and present production. The author's prediction of major changes to be brought about by extensive use of commercial and "family" helicopters, as a means of postwar and future transportation, is based on established performance records and engineering development trends.

Mathematics

Mathematics for Engineers, by Raymond W. Dull, Consulting Engineer. Second Edition. 5½x8, 780 pages, illustrated. McGraw-Hill Book Co., Inc., New York, N. Y. $5.00.

Believing that practicing engineers need a special kind of mathematics book, the author prepared his own notes on mathematics during the course of his own engineering practice, and has presented them in the form of a reference book ranging in content from simple numeric computations, algebra, geometry, trigonometry, through integration and summation.

Steel and Timber

Steel and Timber Structures, compiled by a Staff of Specialists; Editors-in-Chief, G. A. Hool and W. S. Kinne. Second edition, revised by R. R. Zipprodt and D. M. Griffith. 6x9, 724 pages, 433 illustrations, tables, charts. McGraw-Hill Book Co., Inc., New York, N. Y. $6.00.

The second edition of this handbook presents detailed material on modern civil engineering structures as revised by R. R. Zipprodt, consulting engineer, and D. M. Griffith, professor and chairman of Bucknell University's Department of Civil Engineering. Beginning with the treatment of steel office buildings, it takes up special features of steel mill buildings, discusses timber mill construction and timber framed floors and roofs, general design and details of roof trusses, arch types, principles in design of steel railway and highway bridges and trestles, information on vertical cylindrical tanks, elevated tanks and towers, steel chimneys, structural steel detailing and erection, the technique of estimating steelwork.

Reinforced Concrete

The Theory and Practice of Reinforced Concrete, by Clarence W. Dunham. 6x9, 529 pages, 324 illustrations. McGraw-Hill Book Co., Inc., New York, N. Y. $4.50.

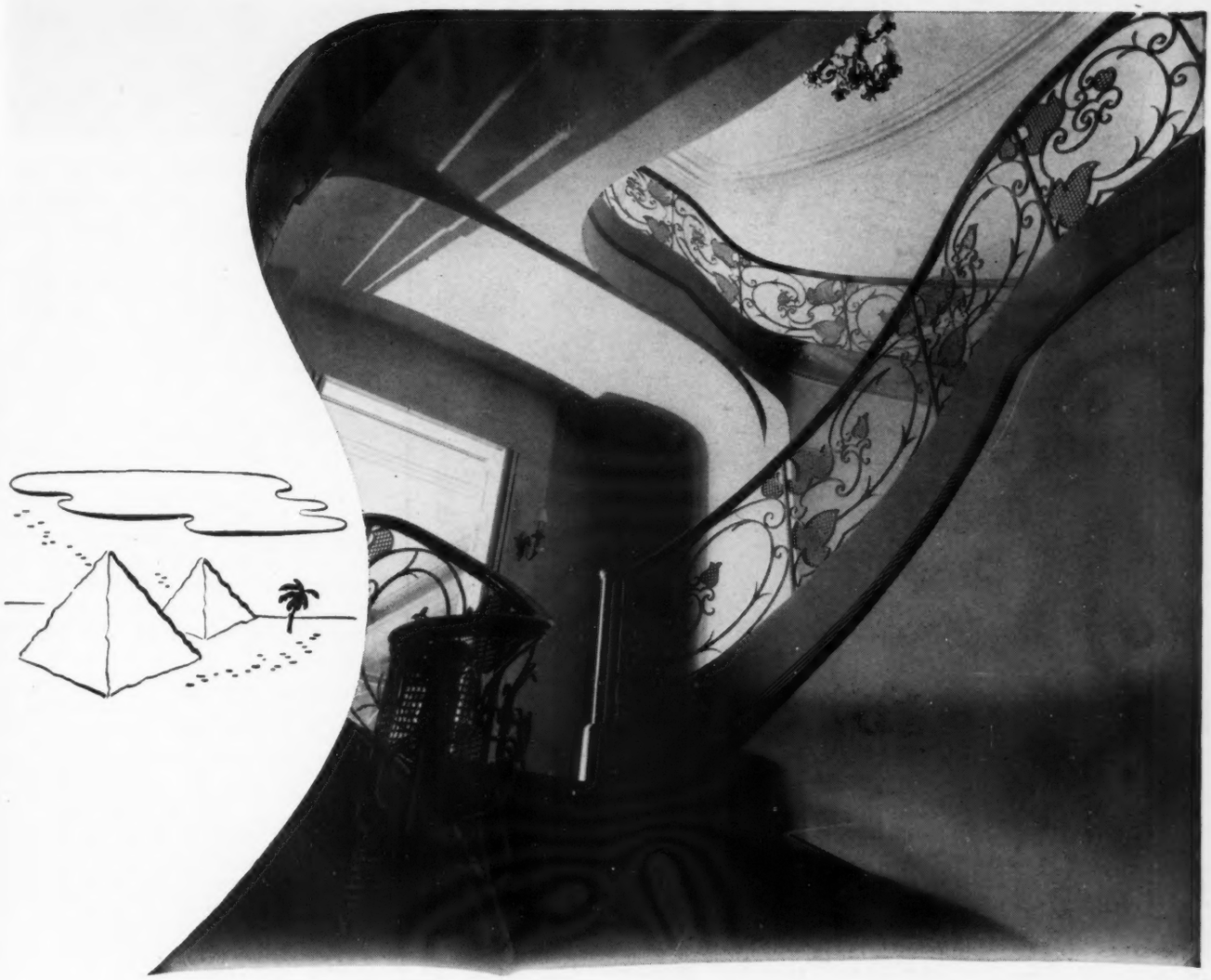
This is an engineering treatment of the basic principles of reinforced concrete structure design incorporating practical construction requirements. Examples and data are taken from actual structures such as the Lincoln Tunnel, George Washington Bridge, Bayonne Bridge, etc., with which the author has had close association. The new treatment of shear and web reinforcement, composite beams, combined bending and flexure in circular columns, masonry-faced retaining walls, continuous footings on piles, negative bending moments in continuous slabs, and cellular construction, are given; a chapter by W. B. Sinnickson, Engineer of Tests, Port of New York Authority, contains information on concrete materials as well as detailed explanation of the manufacture, treatment, and properties of concrete.

Periodicals

LITURGICAL ARTS. A Quarterly devoted to the Arts of the Roman Catholic Church. November 1943.

Through editorial comment on church architecture in several short articles and in photographs, this magazine displays a noteworthy interest in modern church design. Two exciting Swiss churches by Metzger are shown. Other material, such as the reprint from a London magazine, in which an English clergyman gives his idea of "A Church to Long For," and Richard J. Shaw's "The Future for the Construction Industry," have ideas but do not go far enough with them. In describing his ideal church, The Rev. J. D. Crichton's

(*Continued on page 22*)



DURABLE ○ ○ DEMONSTRATED

BY MORE THAN 6,000 YEARS OF SERVICE

For many years, plaster has been doing its job—and doing it better—expressing enduring beauty in sweeping, unbroken surfaces—flowing curves and contours—ornamental relief in molds and casts—quiet dignity resulting from sound-absorbing acoustical plaster.

...And over all gypsum plaster acts as a fire-armor, protecting lives and property—shielding the structural members over which it is applied with a fireproof coat of gypsum, a mineral that will not burn.

Just add up the complete advantages of gypsum plaster—its fire protection, flexibility, enduring beauty, sound absorption, ease of application and decoration. You have a material as old as the Pyramids—modern as tomorrow's sunrise—that fits economically into established building practice.

...And at the very top of the list—Red Top* Plasters have won their way to leadership through research and development. No wonder gypsum plaster is the most widely used wall and ceiling material in the world—"*Plaster Does It Better.*"

*Trademark Reg. U. S. Pat. Off.

PLASTER DOES IT BETTER

UNITED STATES GYPSUM
300 WEST ADAMS STREET, CHICAGO, ILLINOIS

This famous trademark identifies products of the United States Gypsum Company—where for 40 years research has developed better, safer building materials

ONE MAJOR CHANGE

. . . turns an 80-Year-Old Office into a Reception Room—1944 Style

MODERNIZING an office in a building constructed before Abe Lincoln became President isn't an easy task at any time—and it's particularly difficult today when materials are so hard to get. Yet that's the job architect Carl Conrad Braun undertook in remodeling the New York showrooms of the Bestform Foundations, Inc.

In the face of these difficulties, however, Braun was able to bring the Bestform offices up to date with only one major change . . . and without intricate alterations or hard-to-get materials. That change, a simple one to make, was the smartly designed new floor illustrated above, a floor design carried out easily in rich, colorful Armstrong's Linoleum. This, plus repainting and a slight change in lighting, was the only alteration made in remodeling this interior.

Though the Armstrong Floor was economical to install, it brought to the whole interior a modern charm and distinction. This floor design specified by the architect and carried out in Armstrong's Linoleum has brought complete satisfaction to the client.

WIN CLIENT SATISFACTION

This same client satisfaction can be yours if your remodeling plans have the performance backing of Armstrong's Linoleum Floors. These floors are available in a choice of colors which allows freedom of design. And, once properly installed, they'll give service that's a credit to any architect.

If you'd like more information on long-lasting, economical Armstrong's Linoleum Floors, turn to your copy of the 1944 Sweet's Catalog. And, for samples and file-sized specifications, simply address the Armstrong Cork Company, Floor Division, 6906 State Street, Lancaster, Pennsylvania.

ARMSTRONG'S LINOLEUM

Made by the makers of

Armstrong's Monowall, Temlok, Cushiontone, and Asphalt Tile

Reviews

(*Continued from page 20*)

concept is somewhat limited by traditional methods of church design familiar to the author.

Mr. Shaw believes that the majority of architects and builders "will not be distracted by the alleged novelties of prefabrication, demountability or hyphenated indoor-outdoor life which are said to threaten the traditional building processes." In spite of this approach to design possibilities, he offers what seems like good advice on cooperation between the building industries. St. Clement's Church in Somerville, Mass., renovated by Mr. Shaw, shows his prejudices strongly, though an unhappy attempt has been made to use that "modern" material, glass block, as decoration.

THE PENNSYLVANIA MAGAZINE. July 1943.

"Medieval Philadelphia," by William Harbeson, is a sympathetic account of the period 1800-1900 in the city. The author points out the influence of Byron, Scott, Poe, Dickens, Ruskin, Walpole, Weber, Chopin, and a host of others who by variety of locale in their writing, music, and art brought about a period of varied styles and intermingling of these styles that was fantastically versatile, if not beautiful. Here is one of the nicest of descriptions of the "Queen Anne" period in all of its absurd, carefree gaiety. This is a thoroughly sentimental piece, but as the author says, it offers surcease from the usual harping on the Colonial tradition so audible in the usual words on American architecture.

"Philadelphia's Victorian Architecture, 1860-1890," by John Harbeson, is a more controlled, critical account of the period. Influenced by travel and reading, the people were "embarrassingly interested in these evidences of a culture they believed they had acquired and wanted to display." Architects boasted they could "do" Classic, Gothic, Romanesque, etc., equally well. Credit is given to those architects, Louis Sullivan, Frank Furness, and others who were responsible for the attempt to discover a more satisfactory American expression.

Planning Bibliography

Compiled by Margaret Greenough King

The Education of Planners. Published by the Graduate School of Design, Harvard University. July 1943.

Dean Joseph Hudnut, of the Harvard School of Design, in his foreword says this report is an outline plan for the development of instruction in regional

(*Continued on page 111*)

Pencil Points
PROGRESSIVE ARCHITECTURE

Architecture Has Four Dimensions

What is this thing called Good Architecture?

Projection of this topic into any group of more than three architects anywhere in the United States is, and has been for quite a few years, likely to provoke a brisk if not heated argument—often prolonged, seldom settled.

May this be a symptom of what ails the profession? Perhaps there is too much disagreement among us as to our objectives. Perhaps the public has sensed this disagreement and in its very natural confusion has decided that architects don't know their own minds. Perhaps it is time to fight it out once and for all and to agree upon what we are all trying to do. Perhaps it is time to nail down some definite philosophy, tuned to today, to which most architectural men can subscribe.

There are some things about which there is little argument. All hands agree, for example—though with varied placing of accent—that the three prime ingredients of all good architecture, anywhere, any time, are still Fitness, Strength and Beauty.

In view of changing times, however, we suggest that to these three there should now be added a fourth dimension, permeating the others and binding them together. This factor, which we might call Social Purpose, seems destined to characterize the balance of this century and distinguish it from the age of individual glorification just past. Architecture, by the force of such an added intention, might henceforth express the love of mankind rather than the love of the individual—self or client.

Now, taking these four basic elements, how shall we apply them in a working creed? Just to get something down in black and white, how about this?

As to Fitness: Let us first of all design each building, each architectural arrangement of space, so that its three physical dimensions will be proportioned to the satisfaction of all the human needs involved, taken in the order of their importance—none magnified, none slighted. And, where possible, let us provide for more than mere convenience of use. The spirit needs room to expand.

As to Strength: Let us make each structure fully adequate for its purpose but not wasteful. Let us, in determining our design, draw upon the full resources of modern scientific knowledge of methods and materials as well as upon our inherited experience of building techniques. We need make today no concessions to the older ways of building where they would interfere with the best possible space solution for the functional requirements.

As to Beauty: Let us seek true beauty in all of our plans and our buildings, starting with understanding of the basic means by which it may be produced—form and color, rhythm and proportion, balance and contrast and texture and the rest. Let the forms grow naturally from the use and the structure; the color and texture from the honest expression of materials; all controlled as the design grows by the sensitive spirit of intelligent creation. Let us shun lazy-minded imitation.

The past is past: we are making the future.

As to Social Purpose: Let us, in every plan or building we do, be first true to the real needs of our client. Beyond that, however, let us *always* consider and provide thoughtfully for the other people who will use, or see, or be affected by our executed design. Let us scrupulously avoid producing any work of architecture which will make life less pleasant than it should be for any of these. Let us, on the contrary, always plan positively to increase, if possible, the comfort of all.

Many architects—the best, we think—already hold these views. The profession as a whole will not regain its former prestige until the majority of its members unite on some such philosophy.

Kenneth Reid

On Minding Our Own Business . . . . .

With this issue of PENCIL POINTS, we re-dedicate ourselves to the vigorous promotion of what we believe to be good architecture and to the active encouragement of all — whether they be architects or no — who work honestly at improving the human environment.

This, as we see it, is our business.

We like to take sides for things progressive — for schemes that place service to human society above selfish gain. We hope that those who agree with us will do so actively and that those who disagree will do so specifically. It is essential, therefore, that we state our beliefs and goals so clearly that both sides will understand exactly what we advocate.

Let Us Say What We Mean

To repeat, we believe in good architecture and an improved environment. We further believe that the two are inseparable parts of a single concept — a concept made up of ever-widening spheres definable only on the basis of scale. Thus:

Good planning of the individual unit.
Good planning of the individual house.
Good planning of the block.
Good planning of the community and service facilities needed in a residential neighborhood.
Good planning of the neighborhood as a whole.
Good planning of other types of individual buildings — for work, recreation, etc.
Good planning of the facilities needed to service these other buildings.
Good relation between all of the above, including well planned transportation systems.
Good planning of the community as a whole.
Good planning for the region.
Good planning for the nation.
Good planning for the world.

(*The universe, thank the Lord, is still quite orderly; is it a non-sequitur that man has yet to invade it?*)

Although this constitutes a tall order, we believe that those who place faith in anything less than such an over-all concept are somewhere snagged on a compromise.

The progressive spheres, it seems to us, are indissolubly intermingled; and activity within any one, however admirable when isolated for analysis, cannot properly be judged wholly *good* unless it contributes to the improvement of all of the other spheres.

For example, if a house is being appraised, we feel that it cannot be called truly excellent unless, in addition to fitting exactly the needs of the family for whom it was designed (surely the prime requisite), it also improves the general aspect and livability of the block of which it is a unit, is nicely related to neighborhood facilities (places of trade or employment), assists — or at least does no violence to — the development of a sound community, and so on.

Or, suppose a town plan is to be weighed: as we see it, it is impossible to assay it on a shelf, by itself. Again, it must be studied on the basis of what it does or fails to do toward enhancing all related parts — with emphasis again on the bull's-eye of assisting human efficiency and welfare. To be named thoroughly good, it must do the utmost toward

MRS. KELLY'S DOORSTEP

Mrs. Irene Kelly of Pittsburgh got news the other day that her son, Sgt. Charles Edward Kelly, first winner of the Congressional Medal of Honor in the Italian theatre of war, is coming home soon. A photograph published in this newspaper showed Mrs. Kelly on her doorstep passing the news along to some of her neighbors. They were neighbors with good American faces, and one could guess that their homes, and Mrs. Kelly's home, were spick and span inside. But Mrs. Kelly's doorstep abutted on an alley that was certainly not more than ten feet wide, and into which the sun could certainly not penetrate very long in any day. The surrounding walls were of unpainted clapboards or dingy brick.

This housing produced Sergeant Kelly, who must be healthy as well as brave. It produced six other Kelly boys, all now in service. But will anyone dare say that it is good enough for the Kellys? Certainly there is a field right there, in that angle of Pittsburgh, for some housing — subsidized by the Federal, State or City government, if necessary — that will provide Mrs. Kelly with a better doorstep, more sunlight and something better to look at than a gray wall ten feet away.

Editorial, N. Y. Times, April 11, 1944

furthering the human activities for which it will set the pattern; neighborhoods, business areas, industrial zones, etc., must not only serve the needs of the individuals using them, but also bear a fitting and workable relationship to one another. Then, traveling outward in our spheres, the town plan must make good use of the land it occupies, be well-coordinated with well-schemed transportation facilities, have a healthy relation to other towns, all organized within a sound regional framework that constitutes the outline for optimum national development, etc.

While this is admittedly oversimplified, it is but an attempt to define the highest planning standards of which we as a nation are capable — granted ***willingness to fight*** for things as they might be rather than acquiescing to things as they have been.

We recognize that in any particular instance, individual planners — and we, in interpreting their plans — are likely to come considerably short of the optimum goal. But, unless we know where we are going, how shall we know when we have taken a wrong turning or lost our way?

According to our lights, we shall support those individuals or planners or groups that are aware that something better is possible and who try not to cloud their vision with compromise. Conversely, as opportunity and our ingenuity permit, we shall consider it a privilege to expose those planners or groups who, consciously or unconsciously, are willing to compromise at the expense of the better environment, the better world — the goal of human freedom — for which men now die.

What Do We Mean By *Good?*

In its simplest terms, we mean by "good" the same thing we mean by "beautiful" — that which serves its whole purpose well. This is hardly a new idea; ***Socrates, among others, expressed it*** admirably some time ago.

If, then, we accept the moral terminology of "good" for plans that answer their purpose well, obviously lesser plans may be fairly good, fair, poor, or bad — with many subtle gradations in between.

It would be a pleasure if we could publish only thoroughly "good" buildings and plans; the world being what it is, however, these are rare birds. In addition, our judgment being less than impeccable, we shall occasionally publish things that, on total analysis, fall measurably below the "good" level.

Aristippus had asked Socrates a pertinent question: "Is a dung basket beautiful, then?" Socrates replied: "Of course, if it answers its purpose; likewise, a golden shield is ugly, if it fails of its purpose." Socrates, it strikes us, hit a very important nail on the head, and we propose to keep on hitting it.

Criteria

So that you can check your judgment against ours, let us further detail some of the pertinent questions we shall ask when we consider a building or other plan for publication in PENCIL POINTS:

1. **For what purpose was this designed?**
2. **What persons will use it and how?**
3. **How well does it meet their needs — in plan, *design, and amenity?***
4. **How was it built? Does the system meet needs as far as the local winds and weather are concerned?**
5. **Does it make intelligent provision for the use and enjoyment of the free elements of air, sun, and a bit of green?**
6. **What is its relation to neighboring facilities?**
7. **How well does the part work with respect to the whole?**
8. **How well does the whole assist healthier community development, a better environment, the better world, for the construction of which — surely — we in America have adequate materials, equipment, brains, and resources?**

Then, since we are publishing in the twentieth century and have great respect for the remarkable materials, structural systems, equipment, and mechanical systems which are available and to which our modern world has added and will add brilliant newcomers, we shall qualify all of the above by a reasonable check on how well the scheme takes advantage of the contemporary kit of tools.

We are not interested in "Styles" of architecture (except as they have helped catalog a record of architecture's vitality in the past and insofar as the structural forms reveal the nature and capacities of the society that produced them). If a building serves the needs of the people for whom it was designed, is well-built, helps the development of an improved environment, etc., then it is, in our opinion, "good." Predetermination of a "style" for a building should be as impossible as predetermination of sex; it should certainly never be the point of departure for the development of a design. Our interest is solely in good architecture, not in modes or mannerisms.

Getting Down to Cases

The major part of this issue is devoted to exposition of diametrically opposed types of planning, namely:

Good: The approach that starts out with careful analysis of the human activities and requirements involved and makes a sincere effort to meet these needs, resulting in a plan which is a rounded organization of the various essential parts and which promotes a good community pattern that improves as time goes on.

Bad: The empirical approach that overlooks the obvious requirements of the people to be served, or makes false generalizations about them, or allows ulterior considerations to outrank the goal of serving human needs, which results in inadequate organization of the various essential parts, few provisions above absolute minima, and a stultifying community pattern of the sort that generally fosters urban and social distress.

The issue here is not between public and private enterprise; it is between good and bad design and it is upon this basis that we approach it.

As a specific instance, we rehearse in considerable detail the recent ***controversy over housing*** for the lowest income group in Washington, D. C. The speculative builder, in effect, challenges the National Capital Housing Authority's work, says he could have and should have done it, and would have done it cheaper. The Housing Authority, in effect, answers that the builder had no intention of providing anything like the housing that the Authority built; that, therefore, the challenge is not even in point. After searching the plans and testimony, it seems to us that the Authority has produced infinitely better housing, representing a real break with the tradition that was willing to let poor enough alone. We also think that the Authority proved fairly convincingly that the builder had no intention of developing anything like as good or thorough a community plan.

The builder himself offered his work in contrast to the Authority's, and we attempt to show the two schemes in a balanced presentation. Let us say at once that not all speculative builders' projects are as bad as the one here presented; nor is the Authority's particular project offered in comparison as good as it might be. (The builder himself chose both types of projects, and we make our analysis on the basis of his selection.) The Authority's approach tends toward providing good architecture in its broadest sense—***good human environment*** and a healthy community pattern; while the builder's approach, in our opinion, tends toward poor architecture, uninspired human environment, and a stagnant, slum-of-the-future type of planning.

In the field of proper housing for those of limited means, we do care very much **how the planning** *is done. We believe that all persons of whatever financial status should be well housed —for many reasons. We assume that most will agree with us that as a nation we plan to provide good shelter for all and not slums for some. Surely our nation is resourceful enough and rich enough to do it. We should be pleased to hear from any who disagree on this point.*

Because we give extended space to this particular controversy, some may consider that the philosophy we support concerns only low-rent housing. Nothing could be more erroneous; it would be a poor philosophy indeed were it so narrow in its application.

Exactly the same types of problems apply to every building that is designed — a bank, or a church, or a school, or a laboratory, or a factory, etc., etc. And in pages following our discussion of the Washington housing argument we show a few examples of good architecture of various types recently selected by the Museum of Modern Art for exhibit. We agree, in the main, with the Museum's selection, and we invite those who wish to throw stones at some of these (admittedly) glass houses to consider buildings in the same categories in their own communities and check them against some of the pertinent questions we have suggested above. It should be easy to spot similar local buildings that squeeze functions into outworn shells, do little to improve or simplify these functions, that have no intelligent relation to any broad master plan, and that might be better if they had made use of contemporary struc-

tural techniques, new materials, or modern equipment. Why is this? Who or what, in addition to the architect, is at fault?

We should be happy if this issue were to provoke widespread discussion and bring out into the open those who are willing to offer compromises in place of good design — of the social worth of the architect, the future of communities, a decent use of air, sun, and nature, and accomplishment of the best we know.

We should be even happier if the discussion were to draw widespread approval and bring to architects, planners, developers, and builders of all degrees a new sense of the awful responsibilities they assume when they approve something that is less good than it might be. It would be well, we think, if civic-minded and progressive groups — men's and women's clubs, fraternal organizations, labor unions, chambers of commerce, church groups — yes, even architectural societies, etc. — were encouraged to look around their own communities, ask embarrassing questions, focus on the town's physical ills, inquire into the causes, and institute cures and preventive measures against future recurrence. Has your community a plan? Does it know where it is going? Why not? Who is trying to promote it? Who stands in the way? What might *you* do to support and advance it?

While architects are but one of many groups concerned with the planning and structure of communities, yet surely to no other group should the importance of the problem come with such immediate impact. Their effectiveness — indeed their existence — is at stake. Trained as they are to analyze such problems and provide constructive answers, they should be among the leaders in stirring up local discussion and challenging those who wilfully or through lethargy block plans for improving the community's health. As a group, they might well form a battalion to plead for better planning, to help explain to the public the pros and cons, to join with committees, groups, or organizations that work toward building a better world.

Above all, it would seem to be a concern of primary importance to organizations of practicing architects or architectural employees. In this quarter, certainly, one should look for stirring leadership in promoting good architecture in the broad sense we have been discussing. If some particular group is doing little in this line, the individual member might well undertake the task of spurring some appropriate action.

At this point, it occurs to us that we set out to talk about "our business." On the face of it, we seem to be discussing a great many other people's business. This is inevitable, for only through the joint efforts of all interested parties can we inch toward a goal commensurate with the problem. In May, 1942, PENCIL POINTS laid the foundations of a new and progressive editorial program; with this issue, we further detail its structure. Our sincerest hope is that there will be many vocal spokesmen who will make resounding use of it.

The world at war is a hideous revelation of what selfish, anti-social powers for evil can bring to mankind. Insofar as we plan ahead, we are already in the postwar world; eventually we shall be able to give actual expression, instead of the lip service we now give so generously, to building a better world founded on honest concern for human freedom from tyrannies, large or small. The planners, designers, and builders of the physical portion of this better world must not fail the faith of those who now offer their lives for it. Normalcy will certainly not do. The challenge is clear; the job to be done, enormous; the responsibility, awfully humbling. It shall be our privilege to fight the meanness and selfishness and tyrannies of little groups and little men offering explanations, seeking delays, seeking appeasement.

May we not be guilty of doing too little, too late. Right now, leadership in other fields — industry, labor, business, etc. — is applying its training and experience to provide the plans for postwar development and taking an active part in community programs designed to produce elements of a better world. Architect-planners, above all, have a wealth of skill to contribute to the general planning program or to specific portions of it. Nor is the profession ever again likely to have so great an opportunity to prove itself. Even from the purely selfish standpoint, action now — or lack of it — may well determine whether in the years to come, the architect is to rise to his potential stature as a vital, democratic force or become a social question mark.

Opportunities exist on every hand. Why not start a one-man campaign? Or, better still, build a group to work with you. Write letters to the newspaper; stir up public support; urge the editor to run a series of features on your community's postwar plans and problems. Can you do much less? Probably you can do much more. Remember, there's everything to gain — and, mark it well, everything to lose, too. Complaints in the future that others did the work we were better equipped to do will surely be checked against what we actually did when the opportunity was ripe.

By Their Works Ye Shall Know Them. . . .

Photos by Gottscho-Schleisner

Mr. Deckman: *Fort Dupont [above; an NCHA project] is not an example of the type of development you would build for low-rent families.*

The National Capital Housing Authority has recently been the object of attack at Congressional sub-committee hearings. These attacks were, for the most part, ignorant and misinformed. PENCIL POINTS is not concerned with this except insofar as it affects the core of housing: the effort to **improve planning.**

The theme song of the Home Builders Association of the Metropolitan Area of Washington was "We can do it cheaper and better." The editors of PENCIL POINTS have carefully considered the record as to housing costs generally, and doubt if the builder can produce the same quality product any cheaper for himself privately than he does as builder for the government. For, after all, public housing is built by contractors, workmen, and material-producers just as private housing is . . . There is one essential item of cost difference to be carefully noted. The federal acts governing housing require the builder to comply with wage scales established by the Department of Labor. These scales are written into the contract in detail. For public housing the Department specifies what is known as the "A scale"; for private housing, including FHA-insured housing, the "B scale" is used. Builders have stated, without hesitation, that this means an increase for public housing on the construction cost of not less than 10%; a very careful study by the NCHA based upon wage rates certified by the Department of Labor, showed an increase of 17.08% . . . This appears to be a matter of inexplicable Labor Department policy, but the public housing agencies are not responsible for it. Eliminate the mandatory differential and costs become similar. . . .

There remains the question of "better." Ordinarily it is difficult to consider questions of quality in matters of this kind, but a certain Mr. X, a speculative operator of Washington, D. C., was kind enough to make the comparisons himself with examples of his own selection as part of his testimony before the Congressional Committee. On the following pages we present the case of the X project vs. the Parkside project of NCHA, with excerpts from the testimony of various witnesses. In later pages we widen the evidence with pictures of other projects.

All quotations are from the records of the hearings, which were held under the chairmanship of Senator Burton, who was patient, probing, and intelligent. There were many witnesses, and we quote from a few only: Mr. Robert P. Gerholz, president of the Home Builders Association of the United States; Mr. Deckman, representing the District of Columbia Federation of Citizens Associations; the ineffable Mr. Wilkes, at-

Mr. Gerholz: *We think we can recommend to you and to your committee a better plan that conforms to what we think is the American way of doing things.* [*Ed. note: Like the above?*].

torney for the prosecution; Mr. Mathew G. Lepley, who identified himself as an architect, builder, and "a native Washingtonian and one of the few parasites left"; Mr. Bernard E. Loshbough, Assistant to the Executive Officer of the NCHA; and Mr. X, home-builder. We call him X because we wish to have him thought of, not as a person, but as a type of the non-planner.

Let us restate the present position: we are interested in good planning, the creation of decent environment, the prevention today of the mistakes of the past, so that our grandchildren will not have a legacy of slums to undo such as we have inherited from our grandparents. If private enterprise can and will plan wisely and well, we want private enterprise to do it. We are not, in this place, concerned with the question of subsidies, of who gets what for nothing, **except** that if private enterprise is to be subsidized—and the testimony contains plenty of requests for subsidy by the private builders, even going so far as to demand an assured profit—we insist that the public interest demands that they plan socially and humanly as well as economically. We cannot afford to build the slums of the future as part of the "American Way" of free subsidized enterprise.

Private Enterprise Bids Anew

Mr. Robert P. Gerholz:

"As a national association we are opposed to public housing in the postwar period. We hold that home ownership is the bedrock upon which the social and economic structure of this country is built. We respect the theory that it is a legitimate function of our Government to own and operate housing. . . . It is undeniable that private enterprise has the skill and experience to do the job better and cheaper, thus keeping Government out of the real estate, building, and management business. . . .

"It appears that broad powers of condemnation must be available to the end that Government shall acquire blighted plottage as sites upon which private enterprise shall be called to erect housing which it will own and manage. Absorption of the heavy financial loss might better be assumed by community and state than by the Federal Government."

Mr. Mathew G. Lepley:

"We are at war, gentlemen. Our soldiers are living under far more unsanitary conditions than most of our alley dwellings. Mr. Ihlder [Executive Officer, NCHA] says it has existed for 148 years. A few more still certainly would make no difference."

Planning: Look upon this portrait and on this...

Dwelling Unit Schedule

	Parkside	X	
LBR	29	0	
1 BR	0	340	Add to all of these (except the LBR)
2 BR	152	10	Living Room, Kitchen, and Bath. For
3 BR	134	0	the LBR, add Kitchen and Bath only.
4 BR	58	0	
Total	373	350	

Let us consider this from the point of view of occupancy and family composition. Parkside has 967 bedrooms, X has 360 bedrooms. Decent occupancy standards, it is universally admitted, should not exceed 2 persons per bedroom. Parkside has an actual occupancy of 1909, or 1.97 persons per bedroom. X has an **allowable** occupancy of only 720, but it has an actual occupancy (estimated from a 50% sample census) of about 1135, or 3.15 persons per bedroom—a condition of **gross overcrowding** and evidence enough that it fails entirely to meet the normal requirements of a cross-section of family composition.

"When voices of children are heard on the green,
And laughter is heard on the hill . . . "

Senator Burton:

"What is your policy with regard to children in these apartments?"

Mr. X:

"We will take two children any time."

Senator Burton:

"But you cannot put more than two in, is that it?"

Mr. X:

"That is all we want, yes, sir."

Just what is done when the two children are a boy and girl, and only one or no bedroom is available, was not enquired into. After all, there is the bathtub . . .

Low Rent

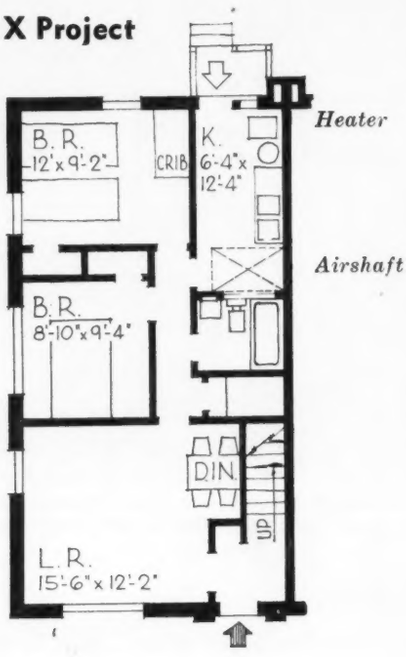
"My average rental per room on this project is $12.35," testified Mr. X.

"We do not take anybody with an income of less than $1,500 and so forth. We have a policy," said Mr. X.

"Our summonses [for non-payment of rent] will average for 700 tenants about 50 a month. I think that is what you would like to know."

Yes, indeed.

Back Door



2-Bedroom Unit

Areas (sq. ft.)

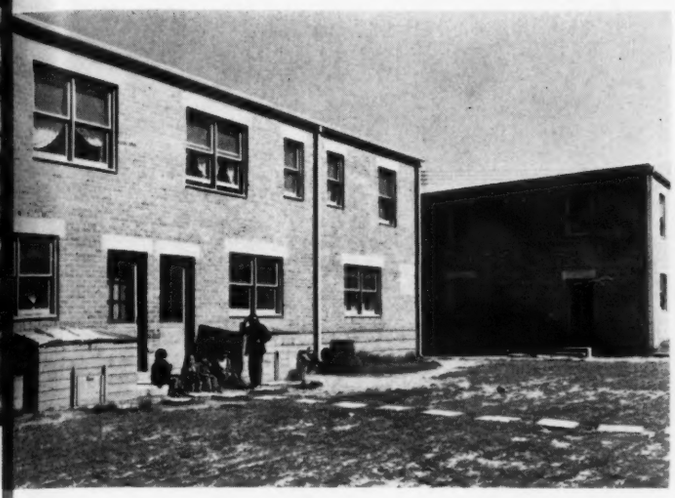
Parkside		X
171	Living Room	178
119	Kitchen-Dining	70
110	BR 1	83
131	BR 2	110
23	Heater	8
40	Bath	32
29	Halls	33
72	Closets and Storage	28
695	Total	542

Unit Plans

The X project consists of flats, Parkside of group houses. Look at the photographs and see what this means in terms of appearance, light, and maintenance.

Appearance speaks for itself.

The light in the kitchens is badly impaired, to say nothing of the outlook. Maintenance of such stairs and porches is high. It is difficult to lug coal up or to avoid slopping garbage down. With flats, neither front nor rear yards are allocable to tenants; there is divided responsibility, and for the front entrance as well. They are noisy, crude, and old-fashioned. As to livability, the kitchens in the X project are cramped, and the heater is difficult to fire. In the 2 BR plan either there is no space for an icebox or else no place to eat except in the



Back Door

Parkside

2-Bedroom Unit

living room, which is quite a trip. The 1 BR unit, which could better spare it as it accommodates fewer people (theoretically), has a hall dinette on the first floor. On the second floor the stair encroaches and makes it useless.

The air-shaft for the bathrooms is wasteful of space and is a filth-catcher. Storage space is inadequate. If the living room is used for sleeping—as it obviously must be—there is no possible privacy.

The Parkside plans are not perfect, but they offer greater livability, more space, more privacy—inside and out. Even the LBR units (which are the nearest thing to the X 1 BR, offering accommodation to two people), which are questionable on many grounds, are more livable than the X units.

Cost: Sound and fury, signifying nothing...

Much was testified to on cost, a muddy controversy of claims, accusations, false comparisons, pointing fingers, the retort discourteous.

The real test of cost is not cost per unit—dwelling, cubic, or square foot—but the **cost per person housed.** The following table shows adjusted comparative costs of Parkside and X on that basis.

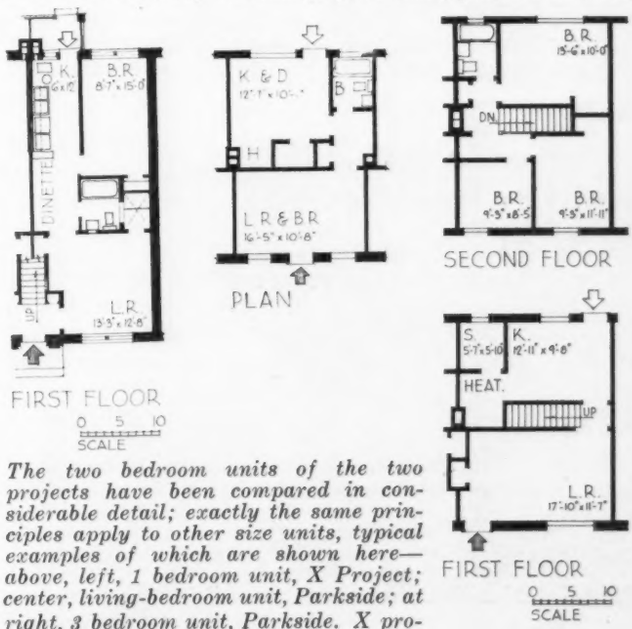
X	Cost Per Person	Parkside
$716,907	Total Cost of Project	$2,034,380
$700,359[a]	Construction Cost of Project	$1,831,507[b]
720[c]	Number of People the Project is designed for	1909[c]
$972	Construction cost per person	$979

a) Mr. X gave the total cost as $716,907, with land at $79,683. This leaves a construction cost of $637,224, but in order to make this comparable with Parkside, adjustment must be made for the 10% differential in "A" and "B" wage scales, as explained in the Introduction to this article. This amounts to $63,135 on the cost, omitting overhead, financial items, etc., to the extent of $5,876. This 10% (not the 17.08% demonstrated by NCHA) brings the cost up to $700,359. At 17% it would be $744,553, or $1,038 per person.

b) There is a discrepancy here, in which we again have given X the benefit. Mr. X used a figure for total cost which is $29,204 lower than that used here, taken from NCHA breakdown exhibit. Both figures omit the non-dwelling structures at Parkside. If we had used the figure accepted by Mr. X as the base cost ($2,005,181), the cost per person would be $944. The land cost at Parkside was $117,285, leaving $1,917,095 construction cost; we also deduct $65,598 for paving, which the X project did not pay for (it was put in by the District; it is not clear whether *all* paving was included; X may have paid for some portion, such as sidewalks), $7,812 for gas and $12,178 for electricity (exterior distribution only), since these were installed for Mr. X by the utilities company (here, again, the testimony is obscure; X may have paid a nominal installation fee; however, it would appear that this would not alter comparative totals appreciably). It should be noted that the Parkside project paid for this installation in order to obtain the benefits of master-meter rates, which result in lower rentals; proper comparability requires their exclusion.

c) Figured on the basis of two persons per bedroom, standard occupancy for X and actual occupancy for Parkside. If Parkside were figured on the X basis of 3.15 occupancy, the population would be 3046, a cost of $601 per person.

General note: costs include interest during construction, administration, superintendence, overhead, professional fees.



The two bedroom units of the two projects have been compared in considerable detail; exactly the same principles apply to other size units, typical examples of which are shown here—above, left, 1 bedroom unit, X Project; center, living-bedroom unit, Parkside; at right, 3 bedroom unit, Parkside. X project has no 3 bedroom units.

Site Planning: Upright men shall be astonied and the innocent shall stir up himself against the hypocrite

Mr. X made a great to-do about getting more lots because he had more street, and consequent economies. On a per person basis he has 41.1 sq. yds. of paving while Parkside has only 24.2 sq. yds.

Senator Burton:

"You put in extra streets, not larger ones, and divided them up into smaller lots?"

Mr. X:

"That is right. . . . All my streets and alleys were hard surfaced by the District of Columbia Surface Division without assessment."

Senator Burton:
"You get more buildings on the same area?"

Mr. X:

"Same plotting, yes."

Senator Burton:

"What happens to the argument about air space, children's playground? Do you think there is an excessive use of it?" [Referring to Parkside.]

Mr. X:

"I think there is an excessive use of it here."

Mr. X is very proud of his fences, too. Parkside has none—and needs none.

Construction

There was a good deal of recrimination about construction. It seems the insulation never got into Mr. X's attic, and he has no fire protection under his heaters and the brick-work is not too wonderful and Parkside has plaster cracks and no yard drains. Something more is involved, however. Mr. X's professional fees amounted to $899.50, including a 10-page specification for priorities. NCHA spent $64,550.70 on architects, engineers—civil and mechanical, landscapers, specifications, blueprints.

Senator Burton (to Mr. X):

"Do you have a bound volume or an accumulation after you get through with your project of specifications?"

Mr. X:

"The only ones I say are these special ones of 10 pages or less we made up for the specific purpose of getting priorities. Other than that, we have no specifications."

Mr. Wilkes:

"In addition to that, in entering into the contract, for example, having to do with footings, you would, by letter, specify the content, proportionate content of sand, water, and cement for the concrete to go in your footings, would you not?"

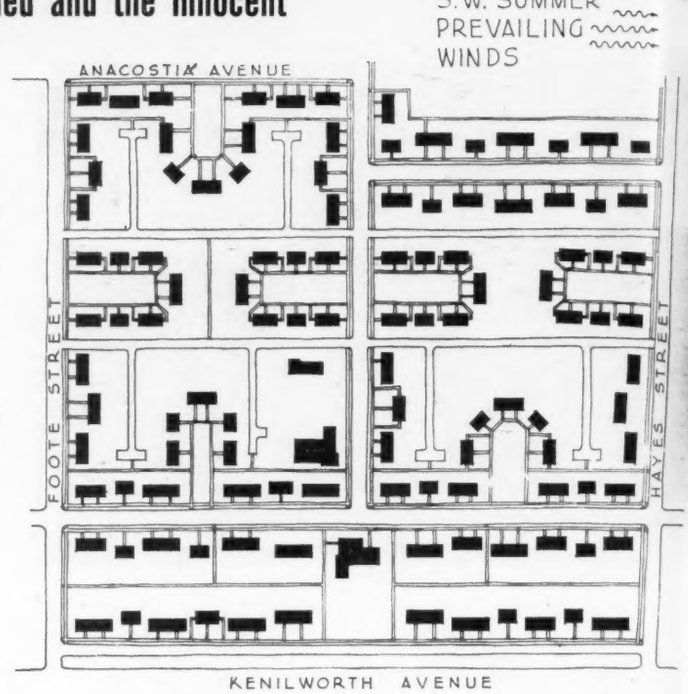
Mr. X:

"I wouldn't go that far. I would state that would go in accordance with the plans and the District Building Code."

Mr. Wilkes:

"The District Building Code, I see."

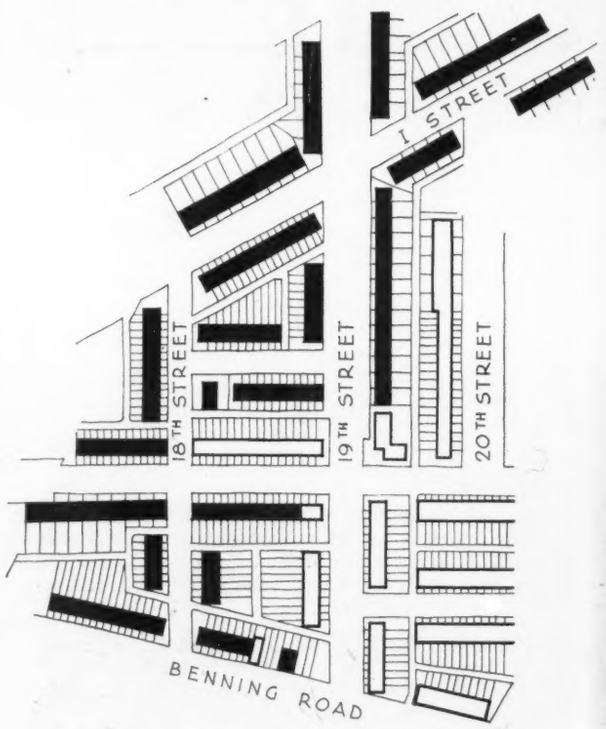
(Continued on page 50)



SITE PLAN **Parkside**
0 100 200 300
SCALE

Parkside:	Gr. Coverage	11%	; Net	16.5%	; streets	25%	of gr.	
X:	"	"	21%	; "	38%	; "	45%	" "
Parkside:	Density	9.8	families,	50.3	persons	per	gr.	acre.
X:	"	32	"	63.7*	"	"	"	"
Parkside:	"	12.25	"	62.8	"	"	net	"
X:	"	46.4	"	92.4*	"	"	"	"

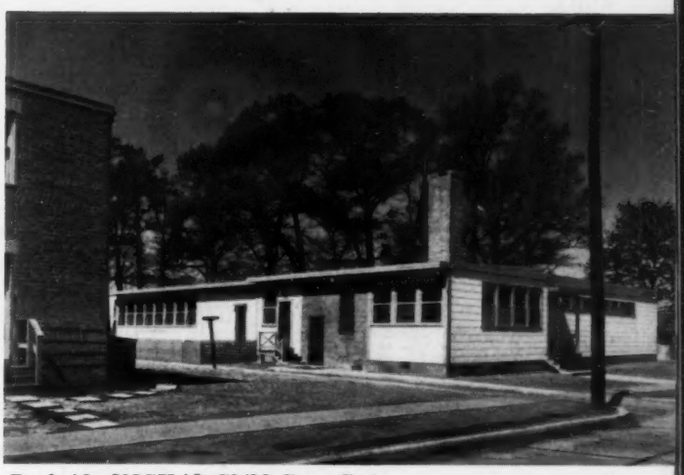
* Based on standard, not actual, occupancy



SITE PLAN **X Project**
0 100 200 300
SCALE

Comparisons are Odious . . . . .

Frederick Douglass [NCHA] Playground



Parkside [NCHA] Child Care Center

PLAYGROUNDS AND COMMUNITY FACILITIES — THE X PROJECT HAS NONE

PUBLIC PROJECTS HAVE OFF-STREET PARKING; GARBAGE COLLECTION STATIONS;

CHILDREN ARE SAFE FROM TRAFFIC; THERE ARE GARDENS, TREES, QUIET SPACES

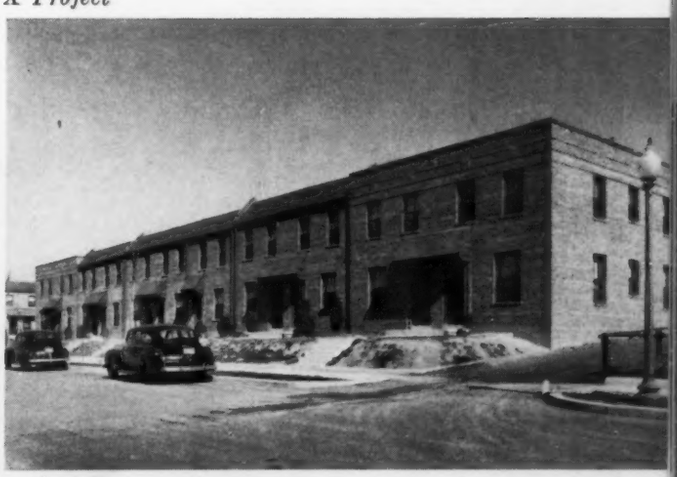
Highland Dwellings [NCHA]

X Project

PAVED ALLEYS, OPENNESS, VARIETY, ATTRACTIVE APPEARANCE — COMPARE!

Barry Farms [NCHA]

X Project



Mr. X:

"And the mixture is checked by the building inspector and so forth on the job."

. . . and so forth. As Mr. Lepley, another witness, says: "There are a whole lot of things amplified in the Government work that is not necessary to do."

"I would be glad to hear about that," said Senator Burton. "That is exactly what I want."

Mr. Lepley:

"Because you will have a superintendent. You will have a timekeeper. You will have a foreman. You will have a clerk in the office, and an auditor, telephone operator, and a stenographer. There are seven in the office, whereas, on a job of mine, I have one man, the superintendent, on job. He does the whole business." Which, of course, as he says later, ". . . . is one of the reasons why Government jobs cost so much money, is because a practical business man is not put at the head of the organization. Not theory. I mean facts. . . ."

Mr. Deckman clinches the thought:

"I would say they [the NCHA] don't know their business. They have architects hired there, and if they can't draw the plans of these things and have to go outside, then they don't know the rudiments of building housing. . . ."

The Intangibles

Mr. Bernard E. Loshbough's statement, in part: "It is encouraging to note that operative builders apparently are at last keenly interested in ridding Washington of its slums. Such an interest as has been evident here at the hearings is a source of real satisfaction to NCHA.

X Project: General Street View

"However, clearing and rebuilding those blighted areas which are adaptable to low rent housing is far more than just a 'brick and mortar job.' Before effective building and proper housing can be provided, an intensive and careful period of planning must take place. After the buildings are completed the dwelling units provided must be more than mere flats or tenements. They must be a living part of the community, where families can find a satisfactory home environment, where children can have adequate space for recreation which is free from insanitation and traffic hazards. If private enterprise will actually do the job which they have stated before this Committee they will do, there must be definite assurance that its plans will be developed in the interest of the people whose need they propose to meet. One factor that must be included in meeting this need is an adequate supply of well-planned two, three, and four-bedroom dwelling units in lieu of the operative builders' one- and two-bedroom units.

"These dwellings must also be site planned for proper space arrangement that will fit into and advantageously affect the development of the city plan. Building horizontal units, 'which cover the city like a rash,' crowding out necessary open space and producing

X Project: Public Space

Parkside [NCHA]: General Street View

what can truly be called a regimentation of homes, must be prevented. Such developments, not only in the opinion of NCHA, but in that of others who have studied causes of blight, are the future slums of Washington. This is the inevitable result of a type of development that merely builds new buildings in imitation of what has been previously built. To develop plans properly for good housing requires the services of competent architects and engineers who are thoroughly familiar with not only the economic but also the social aspects involved in providing adequate housing for low income families. Such plans do not come wrapped up in a $25 set of blue prints.

"One of NCHA's policies in planning is carefully to select an architect who has experience in dealing with, and particularly, who is sensitive to, the human factor of the problem, that is, adequate living space for human beings. It asks him to design a good dwelling with sufficient space, light, and air and the necessary equipment for convenient housekeeping and comfortable living, and of attractive appearance. Since the amount of space taken up by household furniture seriously affects the ultimate workability of any plan, the architect in submitting his unit plans for approval to NCHA is requested to draw on the plans the amount of furniture needed for convenient living.

"NCHA also stresses to the architect the very important problem of proper site planning. In developing the site plan the architect is requested to keep his density as low as economically possible so that the tenant is provided with maximum light, ventilation, and view. The solution must also provide for play areas for pre-school age children, sitting-out areas for adults, drying yards and arrangement for convenient refuse collection. Again I state that the fulfillment of such an assignment does not come wrapped up in a $25 set of blue prints.

"At one point in the testimony one of the witnesses stated, concerning two of NCHA's war housing projects, that they never would have been built if the advice of real estate operators and bankers had been sought and followed. Possibly not. This may be the reason why little or no advance has been made by operative builders in low cost housing.

"NCHA doesn't claim that any of its projects offer a perfect solution to the problems involved in large scale housing, which are very different than those concerned with just 'a house.' Since NCHA's planning policy is a progressive one, the results obtained are not always beyond criticism. However, NCHA at all times seeks constructive criticism. Each of the operative builders who have given testimony in connection with NCHA planning and construction have found things in a specific project that they would do differently. NCHA's answer to that is, it also finds things in completed projects that it would do differently if it were planning the project again; it does them differently the next time.

"Those who have responsibility in connection with planning at NCHA are continually studying how the completed dwellings 'work' as places in which to live with a view toward constant improvement in design and arrangement. Again, **the purpose of housing is not simply to build buildings but to provide facilities for family living."**

Parkside [NCHA]: Public Space

Conclusions:

We have presented the case. We do not know of any projects approaching Mr. X's in rents that are any better than Mr. X's. . . . We are not comparing projects that rent for $15 or more per room, or sell for $8,000 . . . We are deeply concerned with good planning for living for the great majority of people, who can't afford $15, or $10 . . . We ask, in the not-so-very-long run, dollar for dollar, or even dollar-twenty for dollar, which type of planning is an asset, which is a liability?

Fort Dupont [*NCHA*]

The larger photographs on these pages show wh results when home projects are undertaken wi really respectable living needs of families as the d parture point. The random snapshots at the top sho developments wherein high standards have bee rudely compromised—for "practical" reasons. Eithe obviously, is possible. Which, we ask, *is* the more prac cal in the long run?

Fort Dupont [*NCHA*]

Both Views: Highland Dwellings **[NCHA]**

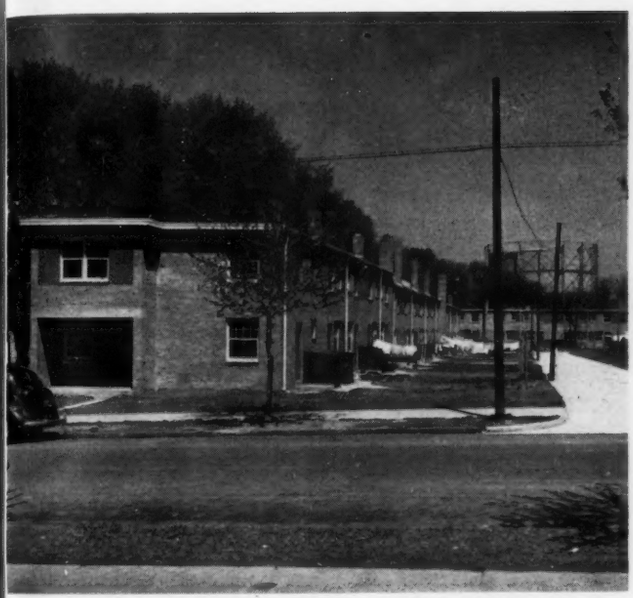
Parkside **[NCHA]**

What Do You Mean By "Practical?"

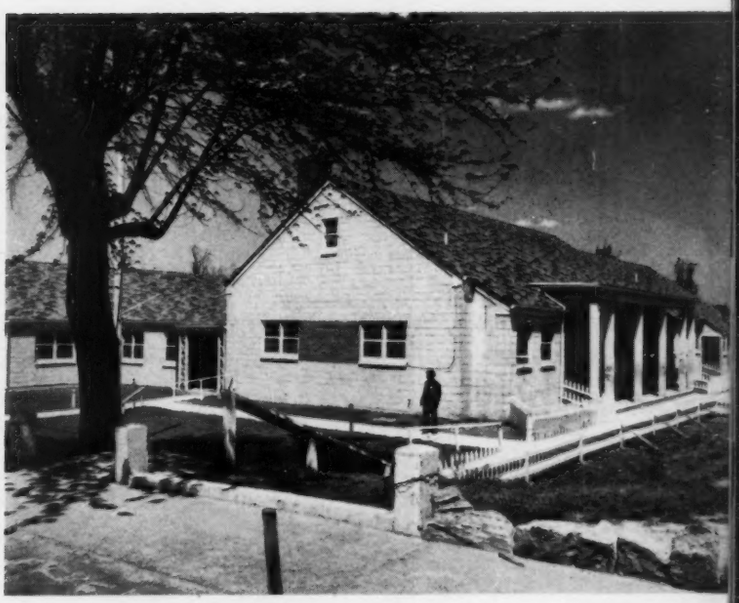
Here, again, the photographs at top offer striking contrast to those below. Details aside, is it not obvious which is the better type of planning? Some say it is "uneconomic," that it is "impractical" to provide the better architecture. For whom? For how long? For the housed? For the community's health? For the community's future? For the architect? For the manufacturer of building materials? What about fire hazard? Or incidence of disease?

Barry Farms [NCHA]

Frederick Douglass [NCHA]

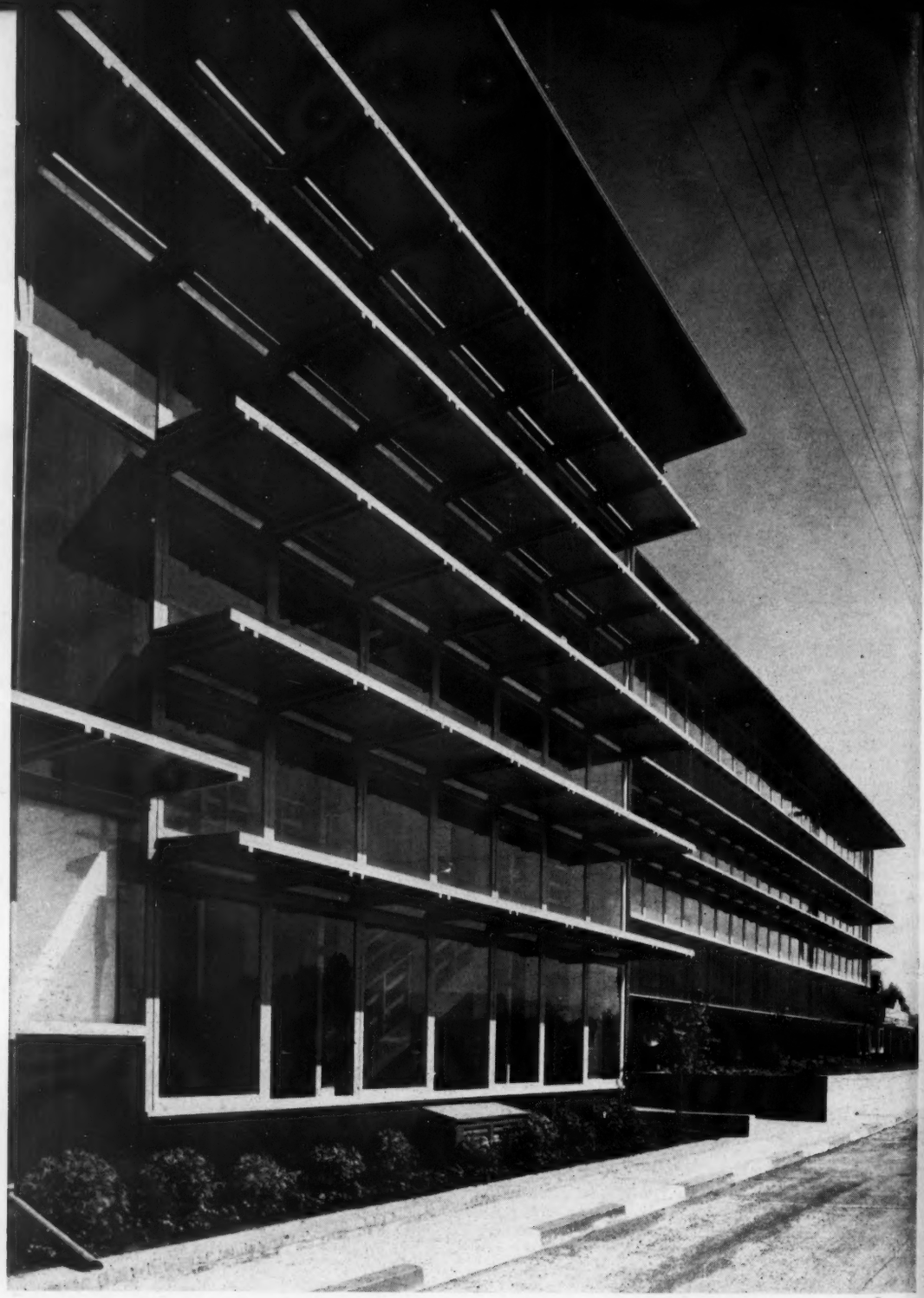


James Creek Dwellings [NCHA]



Barry Farms [NCHA]

Highland Dwellings [NCHA]



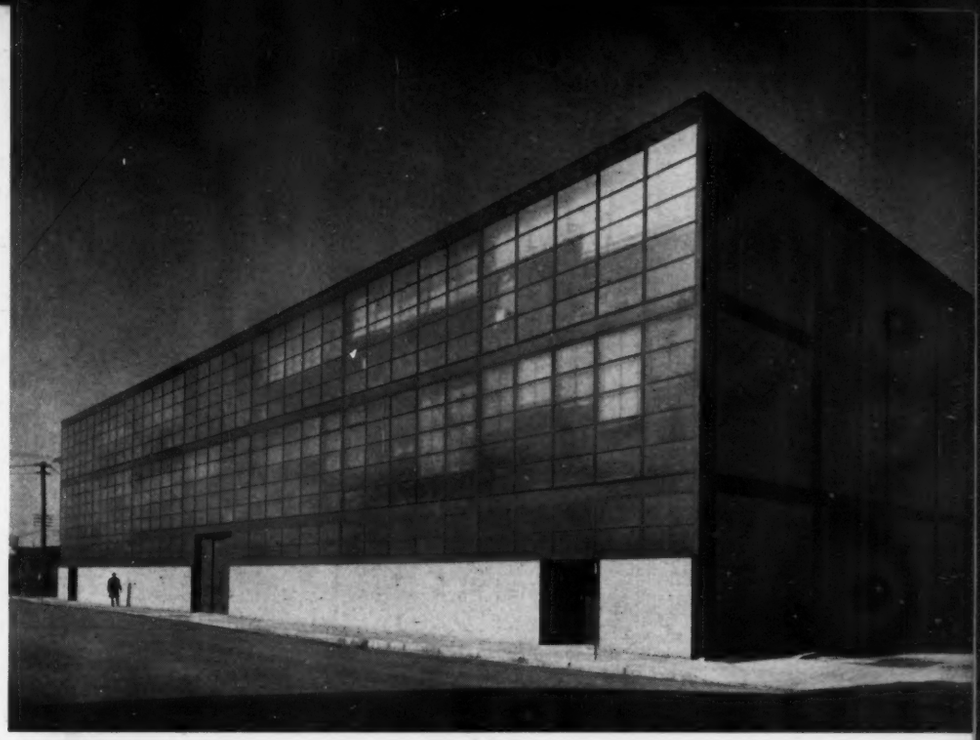
PROGRESSIVE ARCHITECTURE IMPLIES CREATION OF ELEMENTS OF AN IMPROVED ENVIRONMENT

The photographs shown on these ten pages were selected from "Built in U.S.A., 1932-44," the architectural section of The Museum of Modern Art's 15th Anniversary Exhibition, "Art in Progress," on view in New York until October 8, 1944. The exhibit, schemed to give visual definition to what constitutes good architecture, proved a happy coincidence, since it appeared at just the time we were planning this issue devoted to precisely the same subject. It is gratifying that the Museum's selection seems to us, also, to be good architecture. We feel it is only proper to say, however, that the accompanying comments—to which the Museum may or may not subscribe—are our own.

Office Building for the Schuckl Canning Company, Sunnyvale, California. 1942. Architect: William Wilson Wurster.

Particular conditions of operation made it advisable to move the company's executive offices from city quarters to join management and operating units of the plant itself in the country. What city office employee can fail to envy those who work daily in this well-lighted office structure, from which broad country views are everywhere a matter of course?

The fixed wood awnings keep the sun under control. At the first-floor level at right of photograph, the building is open between frame members, forming sheltered parking space for cars.



Metallurgical Research Building of Armour Research Foundation, Illinois Institute of Technology, Chicago, Illinois. 1943. Architect: Mies van der Rohe; Associate Architects: Holabird & Root.

Consider what might have happened if the architects had approached this design problem on the basis of "style." Could the Gothic or Saracenic approach have produced as good a research laboratory? The needs were specific: a strongly built structure of a size to accommodate a constantly changing array of machinery, devices, and inventions in the making. Because pure research requiring exact observation was to be conducted, excellent light was a primary factor. The structure seems to us to have the hard, clean beauty inherent in any tool correctly designed to perform a highly specialized job.

The Lake County Tuberculosis Sanatorium, Waukegan, Illinois. 1939. Architects: William A. Ganster and William L. Pereira.

This distinguished piece of architecture offers clear answers to the pertinent questions we ask in judging a building's merit. It was designed to assist in the cure of tuberculosis patients, who need controlled exposure to sunlight—in some cases, as much as possible. As a well-integrated group of units which serve their individual and joint purposes admirably, are pleasingly organized on an ample site, and nicely related to highway access, it offers a bold, basic pattern, the intelligent development of which would surely lead to a healthy community scheme and a good man-made environment.

Crow Island School, Winnetka, Ill. 1940. Architects: Eliel and Eero Saarinen; Perkins, Wheeler & Will.

Just one view of a primary classroom of this school presents a challenge to those who maintain that "what was good enough for Father is good good enough for me." Even approached from the sticks-and-stones level, see what a whale of a difference large expanse of glass can make—or air conditioning, or proper artificial illumination, or resilient floor surface, or acoustic ceiling. Furthermore, how much better are the movable furniture units, allowing varied placement for varied uses, than the regimented, all-alike desks that used to be screwed to schoolroom floors in rows.

IF HUMAN SOCIETY IS TO BE WELL SERVED . . .

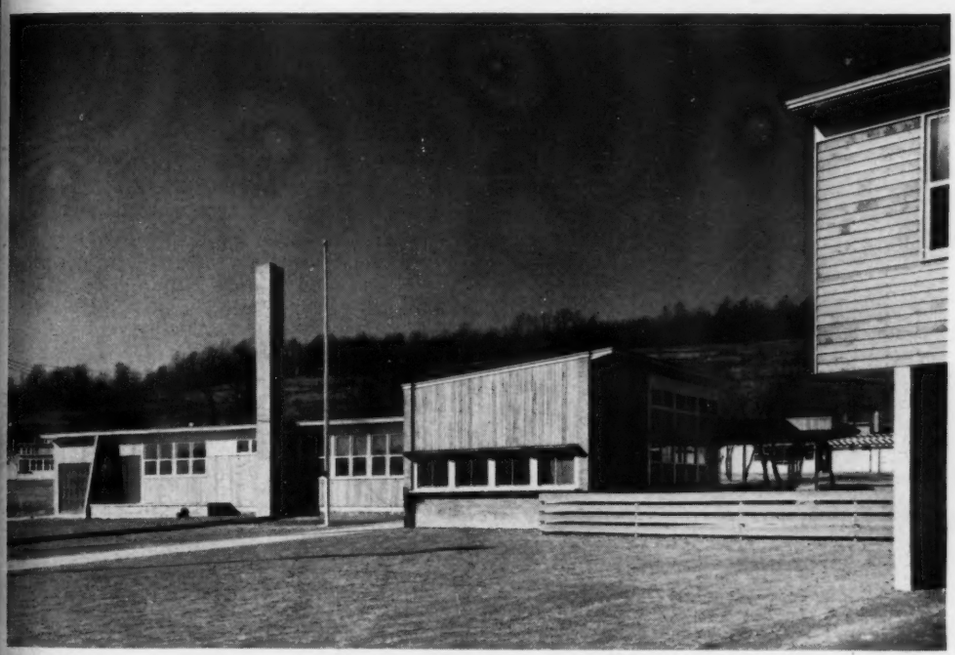
Valencia Gardens, San Francisco, California. 1943. (Originally started as a USHA low-rent project; 246 units.) Architects: Harry A. Thomsen, Jr., and William Wilson Wurster. Landscape Architect: Thomas D. Church.

We can do no better in indicating why we (and presumably, the Museum of Modern Art) consider this fine architecture than by re-quoting the architects: "Early in the design we agreed to do all we could to stress the dignity of the individual. There would be no emphasis on the great axis which would only serve to show how small each family was in the sum total.

"Each apartment to be entered from a balcony has small wing walls which designate a portion of the balcony as belonging to that apartment. Each living room has a window with a low sill, and a railing for security, so that a mother may look down into the garden, or to see her children, rather than just look across at other apartments."

Acalanes Union High School, Lafayette, California. 1940-41. Architects: Franklin & Kump and Associates.

This is an example of good architecture created in spite of a complex educational program faced with a limited budget. The community wished an advanced type of school—one that could grow, with movable partitions between classrooms to care for changed needs in the future, planned so that adults could use the auditorium and other facilities when school was not in session. Expansion is possible in any quarter without disrupting present installations. The group as a whole is one of the most advanced examples of the pavilion plan applied to the school problem.



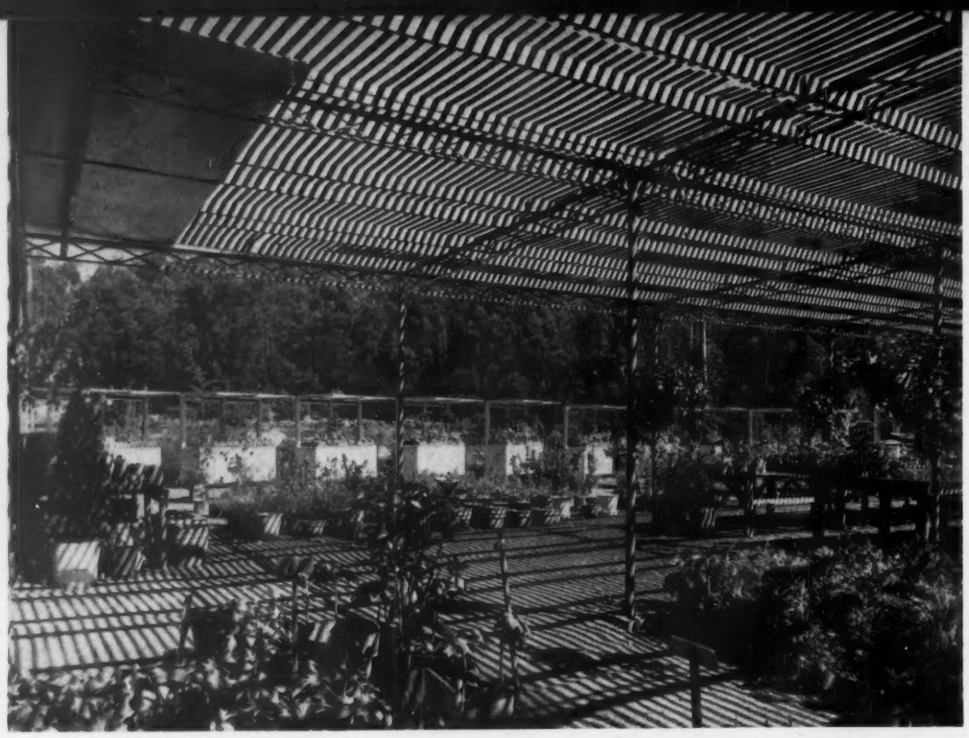
Carver Court, Coatesville, Pennsylvania. 1944, (Permanent FPHA war housing). Architects: Howe, Stonorov and Kahn.

This community, maintenance, and office building for a low-rent housing project is one of the happy architectural results of a design problem worked out on the basis of social need rather than on traditions and styles. Symmetry may have gone out the window; but instead, windows are of various sizes and where they belong—big ones for a social hall, smaller and higher ones along work spaces, minimum ones in service rooms. In addition, sturdy materials are used honestly and organized into a clean and harmonious design.

House for A. Conger Goodyear, Wheatley Hills Road, Old Westbury, Long Island. 1940. Architect: Edward D. Stone.

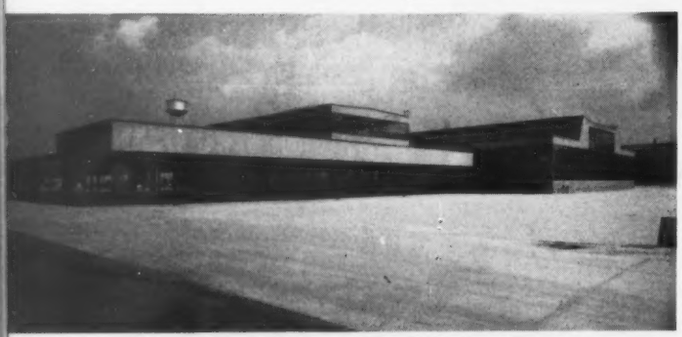
In contrast to the structure for a low-rent housing group shown above, this photograph is of a sizable country home for a private citizen who owns a notable collection of contemporary art. The family's preference joined with the architect's ability to produce an outstanding example of good contemporary architecture in the larger-residence category.

LET A PLAN HAVE A BROAD PURPOSE AND SATISFY IT FULLY . . .



Garden Center for Hallawell Seed Company, San Francisco, California. Designer: Raphael S. Soriano.

One photograph of a portion of this remarkable establishment suggests the whole, comprised of a windowed display room and store, bordered by a large lath house built on a light steel frame (point of view of the photograph) looking across to display and sale plant "bars" and extensive gardens and parking area. The architect made a thorough analysis of what was actually needed rather than what was established practice. "It was not enough," he comments, "to introduce architectural neatness and orderliness—it was essential to introduce these qualities into merchandising."



Dodge Half-Ton Truck Plant, Chrysler Corporation, Detroit, Michigan. 1938. Architects: Albert Kahn, Associated Architects and Engineers, Inc.

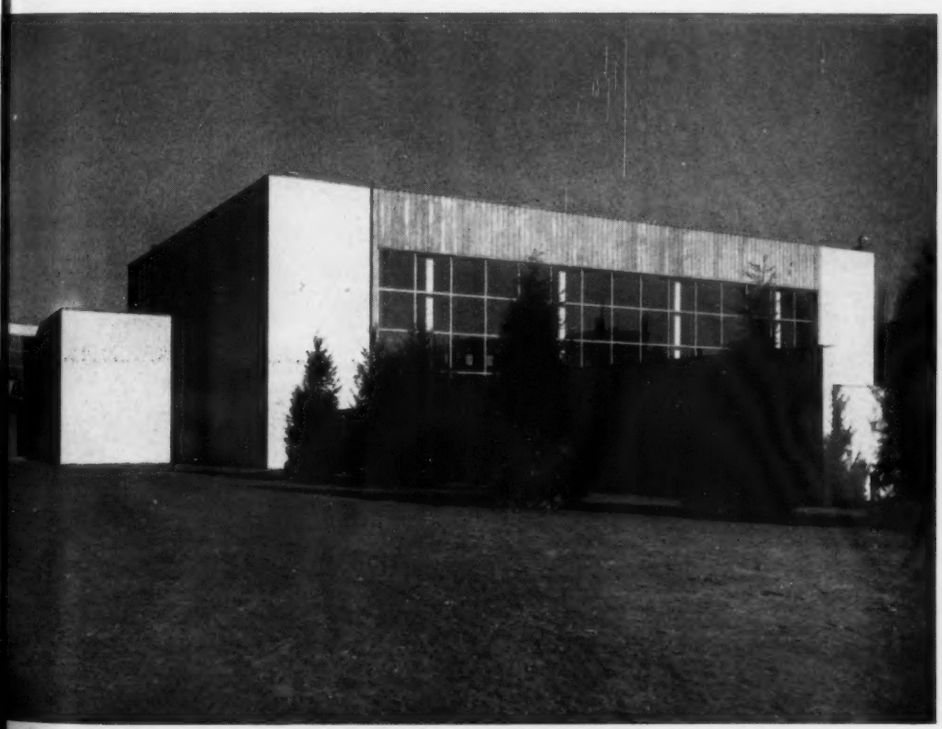
With the growing realization of broader aims of providing good patterns within which all human activities thrive, and greatly spurred by the demands of war production, the factory has fast advanced to become one of our most distinguished architectural categories. The plant shown here, like so many of its contemporaries, reflects design to serve the purpose well: windowed walls and roof monitors, where much natural light is needed; organization of the units so that production steps are taken in orderly progress, forming proud and useful architecture.

The Watts Bar Steam Plant, Tennessee Valley Authority. 1942.

The work of the planners and architects of the great renaissance of the Tennessee Valley is so well known that in this brief space we can hardly hope to add to its renown. It is the outstanding example in the United States of architecture applied in its broadest sense. Starting out with exhaustive analysis of such fundamentals as regional resources, waterways, advantages and limitations of the climate, rainfall, and topography, an improved environment has been created in every quarter—flood control and land reclamation projects, complete new communities, replanning of older towns, research laboratories, cooperatives, recreational facilities, individual houses, etc. Those who say that the broadest approach imaginable is "visionary" and "unrealistic," are, it seems to us, stopped in their tracks by the accomplished fact produced by intelligent joint efforts in the Tennessee Valley.

U. S. Merchant Marine Cadet Basic School, Coyote Point, San Mateo, California. 1942. Architect: Gardner A. Dailey.

There is very little to add to the photograph of this exceptional provision for training personnel for service except to suggest comparison of its general aspect with the appearance of parallel installations elsewhere. Notice that something better does not necessarily mean something more expensive! With good proportions, a nice sense of relationship between elements and functions, a little care given to application of color, and wise organization, the simplest of materials and structural systems come to life as fine architecture.



Alumni Swimming Pool, Massachusetts Institute of Technology, Cambridge, Mass. 1939-1940. Architects: Lawrence B. Anderson and Herbert L. Beckwith.

The architectural problem was to house two swimming pools, shower and locker rooms, spectator provisions, necessary offices and service rooms. The huge window-wall floodlights the pool, and the building is so oriented that in winter, sunlight enters the entire area, while in summer it is effectively shielded. Like the other buildings shown in this section, this meets the needs for which it was built very well indeed; it also constitutes a splendid modern addition to a large, established educational institution, heretofore largely schemed on a rigid, axial pattern. It is a pity that the building to house the Institute's architectural school could not have approached this standard.

Municipal Asphalt Plant, East River Drive and 91st St., New York City. 1944. Designed by the Department of Borough Works of the Office of the Borough President of Manhattan. Consulting Architects: Ely Jacques Kahn and Robert Allan Jacobs.

New York City's Park Commissioner Robert Moses calls this project "horrible modernistic stuff." The Museum of Modern Art lists it among those buildings that "best represent progress in design and construction." In what respect does Mr. Moses find it "horrible"? How does he define "modernistic"? The Museum's criticism is specific and, as we see it, essentially correct. "Here there are three distinct and well related elements: conveyor belt, storage building, and mixing shed . . . The bold semi-ellipse of the mixing plant is no affectation. These clean curves represent the most efficient structural form which could house the machinery."

Taliesin West, Maricopa Mesa, Paradise Valley, near Phoenix, Arizona. 1938. Architect: Frank Lloyd Wright.

What can be said in the face of a structure developed for his own use by the greatest of all our living iconoclasts and trail blazers? It is a highly individual and appropriate setting for a highly individual genius. To Frank Lloyd Wright, the whole world is indebted for his ability and willingness—and sometimes quite alone—to insist that what is created must be fresh creation, that the inherent qualities of wood and brick and stone and glass are things to reckon with vigorously, and to produce such extraordinary buildings that they have changed the approach to architecture in every advanced quarter of the globe.

. . . BE HONESTLY BUILT OF FITTING MATERIALS . . .

Main Reception Building, Great Lakes Naval Training Station, Great Lakes, Illinois. 1942. Architects: Skidmore, Owings & Merrill.

A great, informal hall with a huge fireplace is all that this clean-cut building houses, except for minor offices organized along one end. Wood skillfully employed—for three of the walls and in the bold laminated roof beams (supported on interior steel columns)—forms a frankly functional frame within which is set the bright wall of glass. Simple materials, imaginatively used, combine with the outdoor view (a vital part of the design) to produce good architecture, with style of the sort that matters.

City Hall, Fresno, California. 1941. Architects: Franklin & Kump and Associates.

There are many who would have an instructive experience were they to check this fine new building against their own civic offices. These two protographs are sufficient, we think, to prove that this building is an improvement on nine out of ten city halls of equivalent size. Is your city hall bright with light? Is it thoughtfully set on a landscaped site? Is it easy to travel through, upstairs and down? Above all, is it a place that looks as if it were truly "open" to the public? Why is it not? Why might it not be? What, if anything, do you propose to do about it?

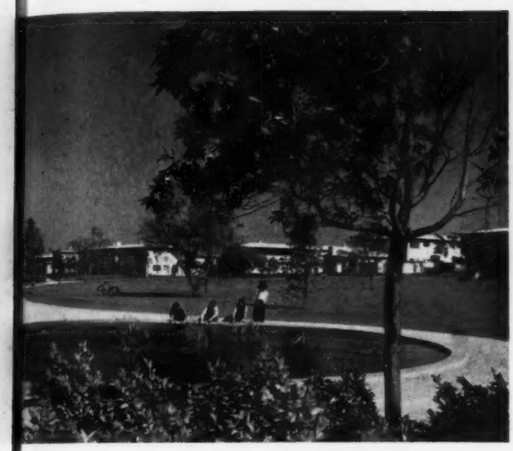
. . . PROMOTE THE EFFICIENCY AND WELL-BEING OF THOSE FOR WHOM IT WAS DESIGNED

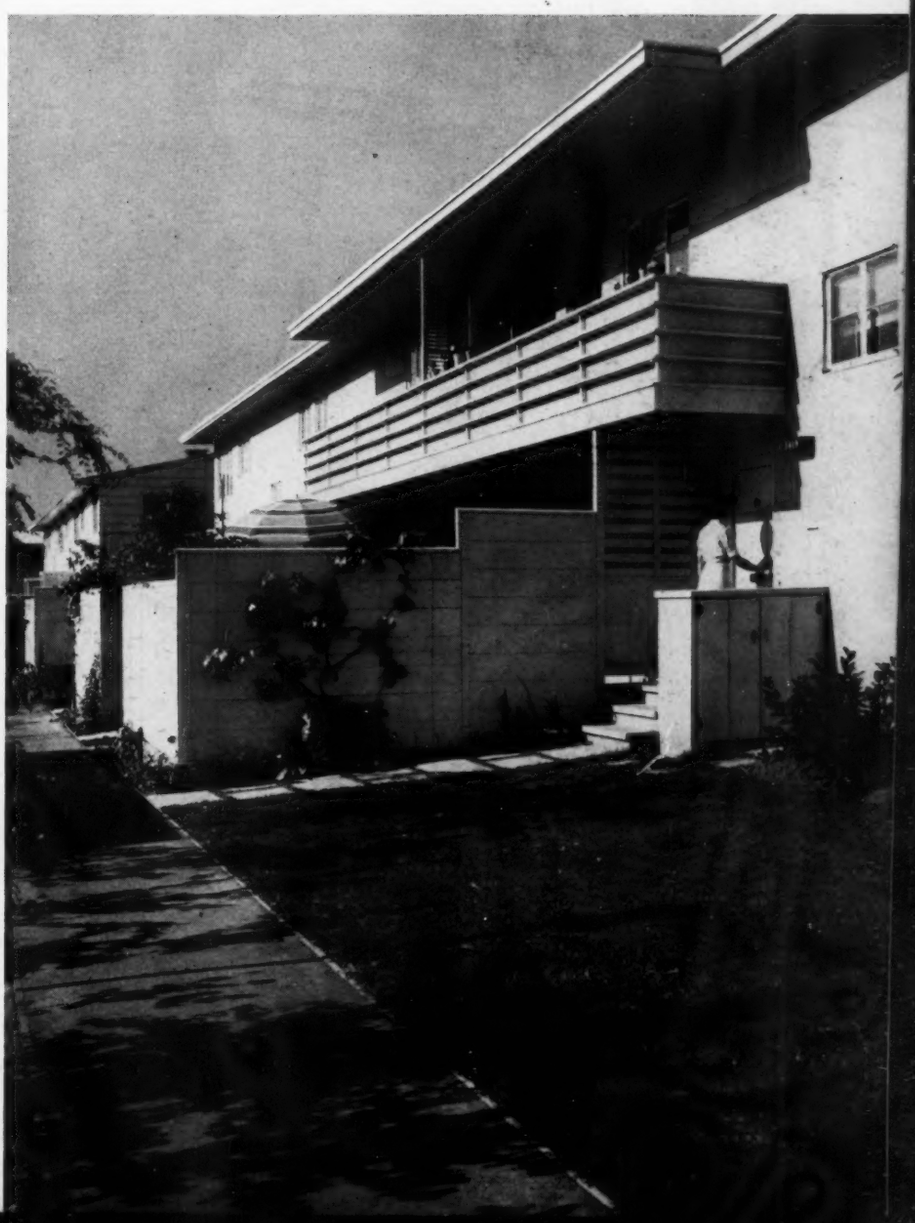
Above: House for Clara Fargo Thomas, Mount Desert Island, Maine. 1939. Architect: George Howe.

In the design of a private summer home, great freedom of choice is possible. Most important criteria are that the house suits the owner's pleasure and pocketbook, is built of harmonious materials in such a way that the structure is congenial with the climate and region, and is of appropriate residential scale. When, in addition to all of these factors, it also takes extraordinary advantage of an extraordinary site—as this house does—excellent is the word for it.

Below: House for Aubrey R. Watzek, Portland, Oregon. 1937. Designer: John Yeon; Architects: A. E. Doyle & Associates.

Located just outside Portland, this hilltop home is a year-round dwelling. Regional characteristics are clearly reflected in the rambling one-story scheme, organized around a courtyard, and in the forthright way in which the designers have organized local wood and stone into a house of dignity and distinction. The site commands a widespread view over intervening valleys to the Cascade Mountains; the enclosed courtyard offers an intimate outlook in striking contrast to the unconfined panorama of the exterior.





Baldwin Hills Village (Federal Housing Authority, Limited Dividend Rental Development of 627 family units), Los Angeles, California. 1942. Associated Architects: Reginald D. Johnson and Wilson, Merrill & Alexander. Consulting Architect: Clarence S. Stein.

The three photographs on this page show the general aspect of a community designed as the home for 627 families. The scheme provides for each of these families much of the privacy and amenity that they would enjoy in separate homes of their own, at the same time supplying the obvious advantages of centralized utilities and joint maintenance. Sun and light and air and planting are integral parts of the over-all plan. A bit of private lawn or garden has even been provided for each dwelling unit, screened from its neighbors with sightly wing fences Play space for children; shaded walks and straightforward architectural design combine to form a good environment for good homes in a good neighborhood—good architecture, in an inclusive sense.

Photos in this section by: Esther Born, Gottscho-Schleisner; P. E. Guerrero; Haskell; Hedrich-Blessing Studio; Margaret Lowe; Photo-Art; Ben Schnall; Julius Shulman; Ezra Stoller; Roger Sturtevant, and TVA.

STUYVESANT SIX:
A Redevelopment Study

BY MARCEL BREUER, A.I.A.

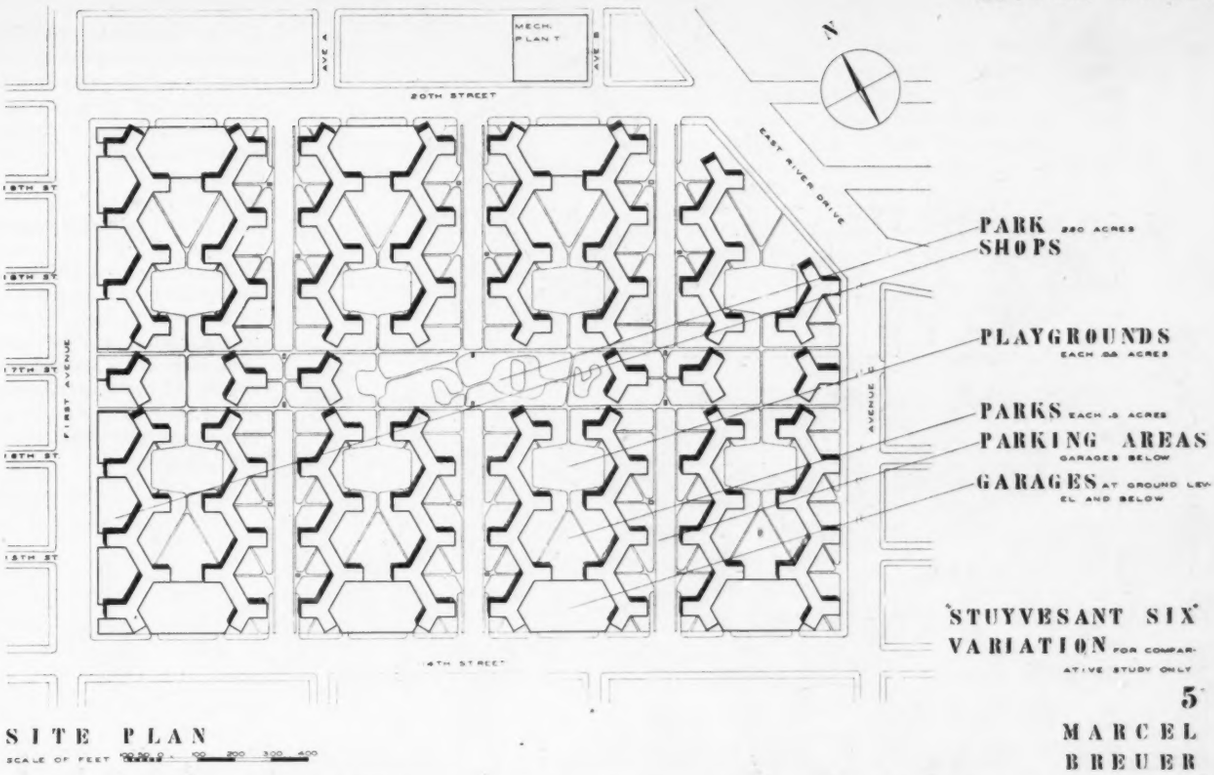
Editor's Note:

The undertaking, after the war, of large scale urban rehabilitation projects by strong aggregations of private capital such as insurance companies or specially organized redevelopment corporations is highly desirable and should be encouraged. Since, however, this type of project is in many respects new, since it involves many economic and social as well as architectural problems, and since the public interest is heavily involved, it seems important that it should be studied thoroughly by the architectural profession.

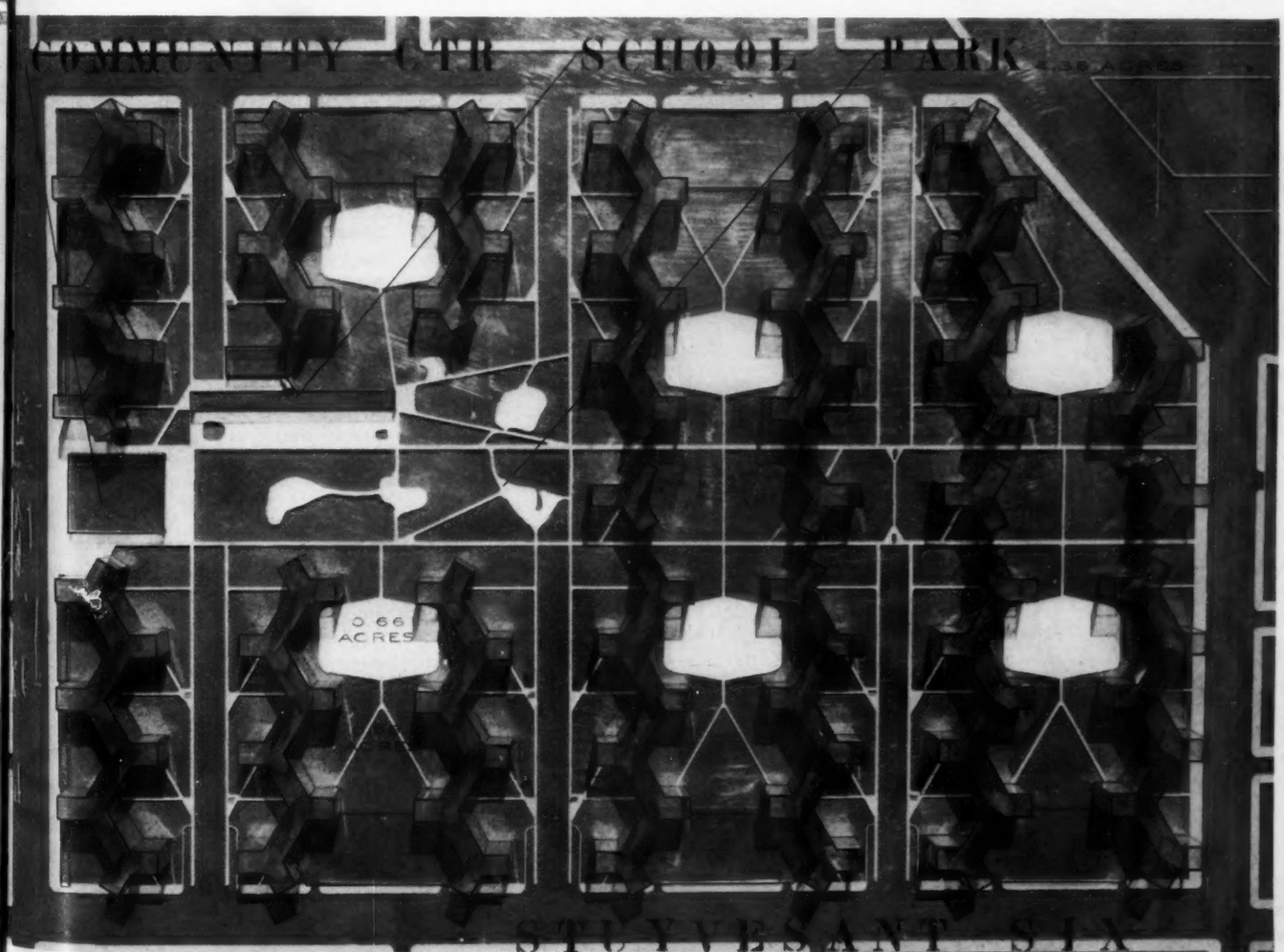
The original presentation some months ago by the Metropolitan Life Insurance Company of its scheme for "Stuyvesant Town," in New York, was met by a storm of protest. Most of the objections were based on social considerations such as racial discrimination, but some were made by architects and planners who found the Metropolitan's preliminary scheme vulnerable as a housing design and so testified at the public hearings. The storm rose to a high pitch and then quieted down. The courts found for the Metropolitan in several suits that were brought. Finally all objections were apparently overcome and it was announced in the newspapers that contracts had been signed with the city to do the job as soon as war restrictions were out of the way.

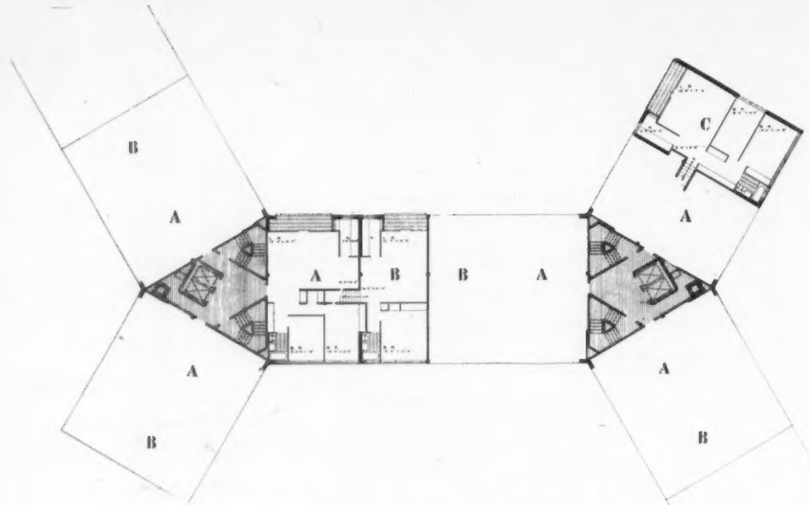
Several able and responsible architects, however, recognizing the importance to the profession of improving the standards of planning of such large scale projects, set to work with Stuyvesant Town as a point of departure to see if they could possibly develop improvements in the space arrangement of both the individual apartments and the site. Their aim was definitely not to interfere in any way with the execution of the Metropolitan's project but to contribute to the general professional stock of information about large scale urban rehabilitation planning. Their studies were wholly objective in nature and should be so regarded.

One such study, made by Marcel Breuer of Cambridge, Massachusetts, is presented here, with an analysis by the architect. It is not held up as the eventual ideal but as indicating some of the possibilities that might be considered in the design of future large scale undertakings of this type. We consider it better in most respects than the Metropolitan's scheme: we hope that still better schemes will be developed as time goes on.



Above, site plan for the "Variation," made for comparative reasons with the same density as the Metropolitan project for "Stuyvesant Town." Below, the "Stuyvesant Six" scheme representing Mr. Breuer's real suggestion with some lowering of density and with community facilities included. For complete discussion see following pages.



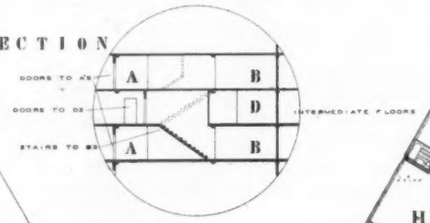


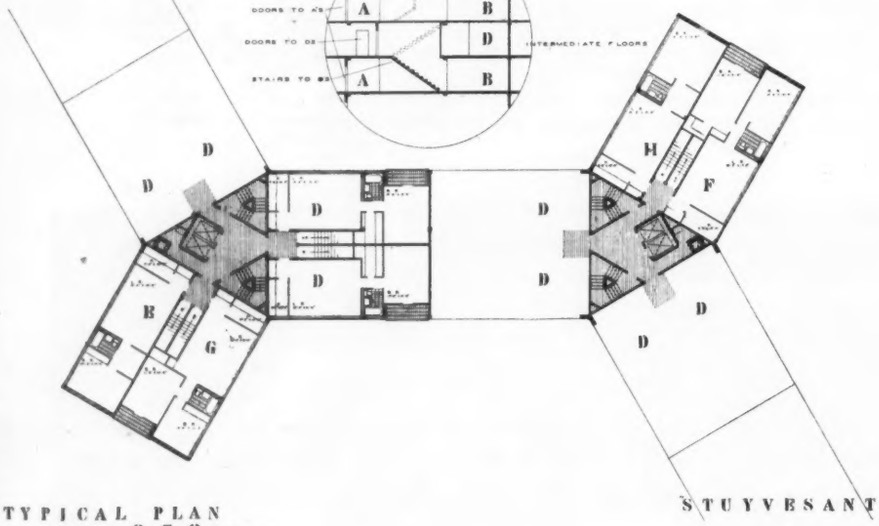
TYPICAL PLAN
FLOORS 1.3.4.6.7. ETC.
NOTE A, F, ETC. REVERSED

STUYVESANT SIX

To achieve cross ventilation without losing elevator efficiency, a new type of apartment building is suggested here. In each wing on three sides of a central communication tower every third floor serves as an approach on level to type "D" apartments and also to private stairways leading to type "B" apartments on the floors above and below. Type "A" apartments are approached directly on level from halls between intermediate floors. This system gives complete cross ventilation to two-thirds of the apartments with about half of the remaining third having corner ventilation (in the end wings).

KEY SECTION



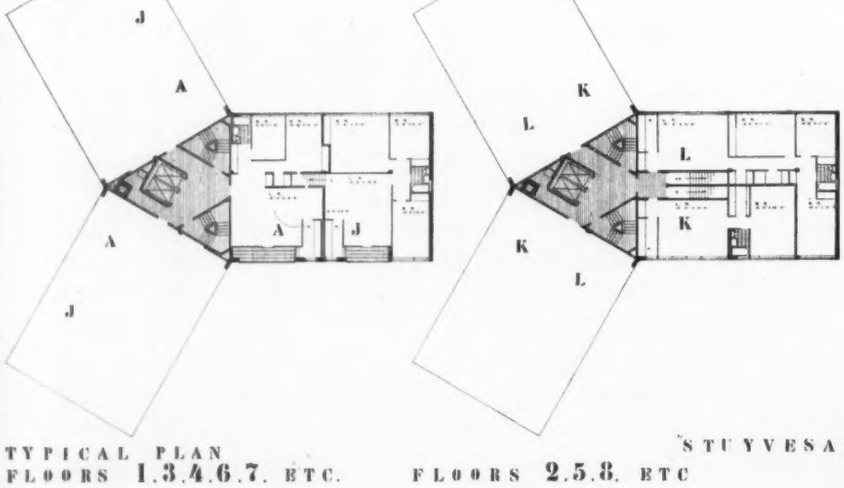


TYPICAL PLAN
FLOORS 2.5.8. ETC.

STUYVESANT SIX

DATA

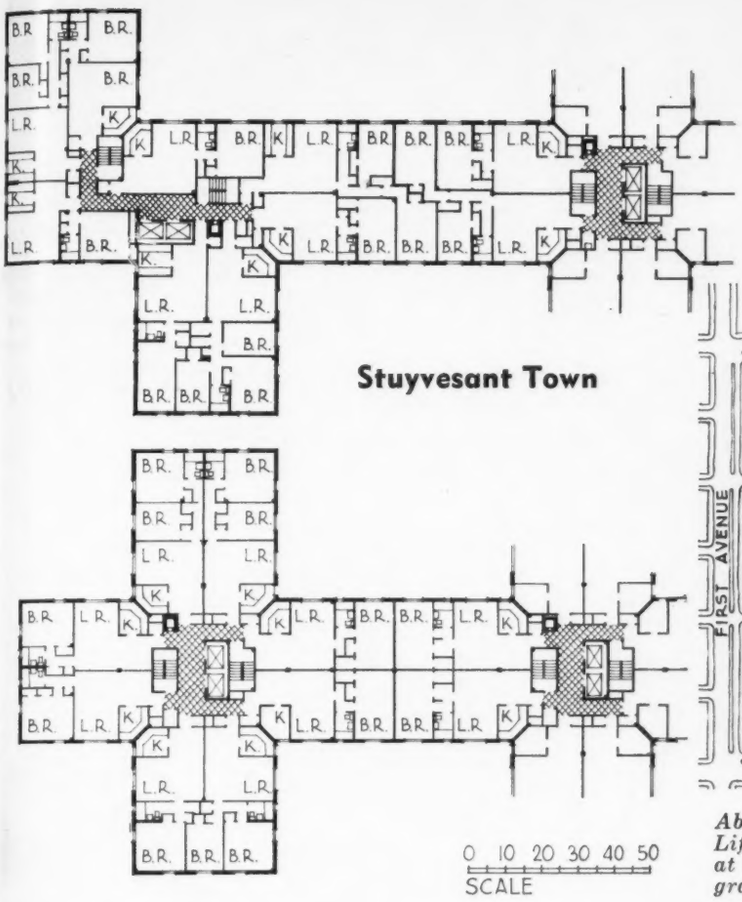
	Stuyvesant Town Corporation Project. Based on plans, etc., May 3, 7 & 12, 1943	Stuyvesant Six Project. Based on plans by Marcel Breuer, Feb., 1944.	Variation Comparative Study.
Apartments without WINTER SUN, approx. % of total no.	35	8	8
Apartments WITH CROSS-VENTILATION, % of total no.	3¾	66⅔	66⅔
Apartments WITHOUT CORNER- OR CROSS-VENTILATION, % of total no.	23	18	17⅓
DISTANCES between 2 facing windows, ft.	60-200	140-280	95-235
Recreational Areas, acres: Quiet PARKS and PLAYGROUNDS.	7.09	12.36	11.50
Coverage by TALL APARTMENT bldgs. only, % of total site	25	18¼	22½
BUILT-OVER AREA, incl. apartments, garages, stores, % of total site.	35½	27½	33⅓
Coverage by SCHOOL, COMMUNITY BUILDING, % of total site.	——	1¾	——
Total no. of APARTMENTS	8,842	7,110	8,730
DENSITY, apartments per acre	144.26	116.25	142.52
PARKING, no. of cars.	400	944	1,032
Indoor GARAGES, no. of cars	3,000(?)	2,520	2,688
SHOPS, ft. frontage.	1,000	1,040	1,200
Total no. of ROOMS (construction number)	31,050	25,018	30,758
Gross residential FLOOR AREA per apartment, sq. ft.	942 no balconies	1,015 including balconies	1,015 including balconies
No. of communication CORES with duplex elevators and stairs.	102	80	97



TYPICAL PLAN
FLOORS 1.3.4.6.7. ETC.
NOTE A, F, ETC. REVERSED

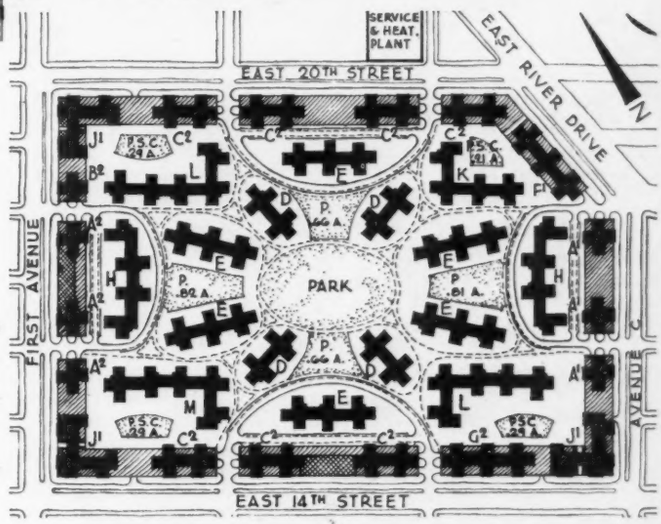
FLOORS 2.5.8. ETC

STUYVESANT SIX



Unit plans for "Stuyvesant Town" as originally filed with the New York Board of Estimate by the Metropolitan Life Insurance Company. It is possible (and we sincerely hope) that the Met.'s Board of Design has worked out some improvement in these plans but they have not yet been made public.

On the facing page are the unit plans by Marcel Breuer for the apartments he proposes in "Stuyvesant Six."



Above, original site plan, Stuyvesant Town, *by Metropolitan Life's Board of Design, essentially the same as the model at the current exhibit of New York's Postwar Building Program.*

Stuyvesant Six: Discussion by Marcel Breuer

Urban Density: A General Consideration

Most experts in housing, social scientists and planners, consider the high density of our cities the chief source of their evils: slums and traffic congestion with all the attendant bad hygienic, social, and economic consequences.

I am afraid their point of view is somewhat inclined to a country-suburban romanticism. Although they may say that our metropolises are both undesirable and unnecessary, it is a fact that large cities have stood in all cultures and all ages, that they are there today. They have a practical and psychological fascination which undeniably attracts numbers of people. One of the basic elements of this attraction is the concentration, the nearness of a great many things to each other; the choice, or the illusion of a choice between many possibilities.

Adversaries of density may argue that our means of communication and information (speedways, airways, telephone, television, wireless, photography, films, the press) supersede the potentialities of the concentrated urban areas, giving everybody, far or near, the same possibilities. All the same, it is peculiar that in no age has the personal contact been more important than in ours. It is significant that in this war our leaders contact each other not only by radio and telephone, but meet personally more often than leaders in any war of the past. Mail order houses have not replaced the agent, the salesman, who today visits your house or office more often than ever before. Radios do not eliminate the fact that symphony and jazz are produced and listened to directly with increasing frequency.

I do not believe that dissolving our metropolises and giving everybody, say, a half acre of land, would solve the problem. Concentrated, densely populated cities are just as much a part of our life as stretches of landscape and rural neighborhoods—or as anything between these two phenomena.

After assenting to the principle of the city, I still see, of course, slums and traffic congestion. Would 100 families per acre, rather than 200, guarantee a more satisfactory picture?

And here, I think, we come to the critical point: the standards of an urban area cannot be expressed by the figure of its population per square acre. As a matter of fact, this figure is in most cases not only fairly unreliable

as to its computation but also rather insignificant. A much lower density figure in a district of two-story buildings may tend to produce slums and traffic congestion sooner than a considerably higher density figure in 6-, 8-, or 12-story buildings. Los Angeles has one-sixth the gross density of New York City, but its traffic problems are still worse. Rather than dead figures of density, there should be other standards introduced to characterize a city's capacities. The element of *planning* in both physical and economic sense is of more import than the element of density.

Thus we may conclude: *presupposing* that the planning of a metropolitan area is based on *satisfying* human and functional standards, high density has distinct advantages as to:

1. solution of traffic problems
2. problems of maintenance
3. problems of civic administration
4. creation of large, vacant, mid-metropolitan areas for unforeseen developments, such as airports, helicopter stations, etc.

(Points nos. 2 and 3 will be the barrier to blighted areas.)

"Stuyvesant Six":

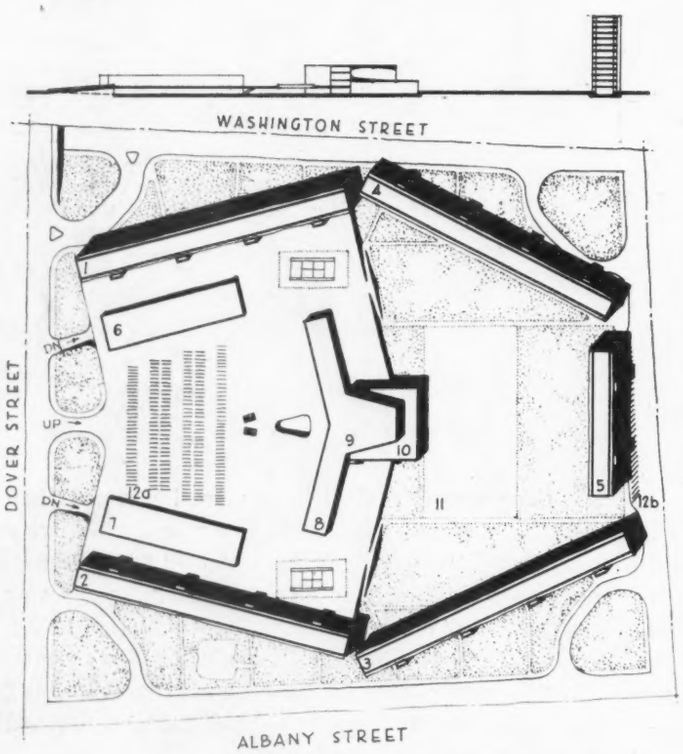
Metropolitan Life's "Stuyvesant Town" for postwar redevelopment of a slum area down in the twenties on the East River side is a project of unusual significance. It is the largest single project of its kind, offering housing for 25,000

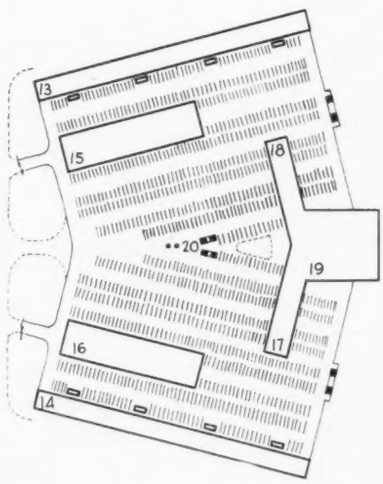
(Continued on page 102)

Redevelopment Scheme For An Area In Boston, by Marcel Breuer

SITE PLAN

1 Apartment, 12 Stories, 211—3 Room Units, 23—5 Room Units, Nursery 4800 sq. ft.
2 Apartment, 12 Stories, 152—4 Room Units, 23—5 Room Units, Nursery 5200 sq. ft.
3 Apartment, 12 Stories, 228—3 Room Units, 24—5 Room Units
4 Apartment, 12 Stories, 156—4 Room Units, 24—5 Room Units
5 Apartment, 12 Stories, 96—3 Room Units, 24—5 Room Units
6 Shops, 1 Story, 14,400 sq. ft.
7 Shops, 1 Story, 14,400 sq. ft.
8 School, 3 Stories, 24 Classrooms
9 School & Community Auditorium
10 School & Community Gymnasium
11 School & Community Playground
12a Parking for 156 Cars
12b Parking for 26 Cars





GARAGE LEVEL

(5'-0" below Grade)

13 Apartment Basement
14 Apartment Basement
15 Shops Basement
16 Shops Basement
17 Boiler Room
18 Locker Rooms
19 Gymnasium
20 Gas Station Parking for 786 Cars

SCALE 0 80 160
40 40 120

In contrast to the "Stuyvesant Six" study, conditioned by high density requirements of Manhattan real estate, Mr. Breuer presents here above a study of the redevelopment potentialities of a 24 gross acre slum area in Boston in which 1000 families would be housed and provided with community facilities. Much greater freedom in the use of land is evident. The type of 12-story apartment building proposed, with private balconies on the most advantageous side and continuous outdoor corridors along the access side, is not common in this country but has found success in Europe. Louver walls are introduced here, however, to protect the corridors against our changeable climate and to lower maintenance costs. The community plaza or platform with parking garage under, and with shop delivery yards, transient parking, school yards and general circulation areas above is a novel but seemingly practical idea. Some pot-planting and small green areas would be not too expensive to maintain on this platform to break up the sun's reflection. The bulk of the open area to the north of the community building becomes a quiet park and recreation space for both adults and children. Such a project would be operated by a corporation or cooperative. Widened through-traffic streets surround the area and future clover leaf crossings are made possible at the corners. Based on 1940 prices and land costs, $14.75 per room per month would be an adequate rent, including costs of landscaping, new streets, and utilities. The study assumes that the adjacent 434 acre South End district would be redeveloped at about the same time.

PIPE, Welded and Seamless Steel, for Ordinary Uses, Cont.

FITTINGS FOR STEEL PIPE—Standard weight pipe is furnished with threaded ends and couplings made of wrought iron or steel by the pipe manufacturer. Each length of pipe 2" and smaller in diameter is furnished with a straight tapped coupling. Each length of pipe 2½" in diameter and larger is furnished with one taper tapped coupling. All other fittings are made by companies other than the pipe manufacturers and should conform to American Standards Association Specifications Nos. B-16-d and B-16-c. Fittings vary in weight, metal and finish.

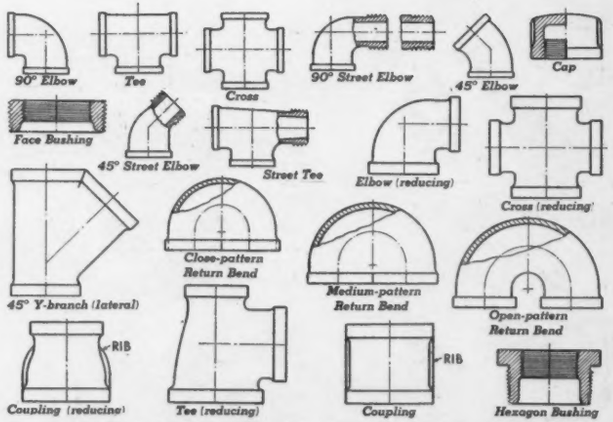
Any fitting can be *standard* or *heavy* in weight—the heavy weight withstanding pressures greater than the standard weight. Some local building codes require the use of heavy weight fittings with standard weight pipe while others permit the lighter standard fittings to be used.

Fittings are made of either *cast iron* or *malleable iron*. These cast iron fittings for steel pipe are not to be confused with the cast iron fittings commonly used with bell and spigot cast iron pipe. The cast iron fittings are less expensive, somewhat more brittle, and slightly heavier in weight of metal. Cast iron fittings are commonly used with steel pipe for steam lines. Malleable fittings are less brittle and are used in locations where shock must be withstood such as on shipboard. They are somewhat easier to handle because of their lighter weight of metal and are commonly used in water, gas, and air lines.

Fittings may be either *black* or *galvanized*, the choice following type of steel pipe that is used.

MARKING—Manufacturers identify each length of pipe by rolling, stamping or stenciling, to show the name or brand of the manufacturer, the length, the hydrostatic test pressure, except that for smaller diameter pipe which is bundled this information may be marked on a tag attached to the bundle.

SPECIAL TREATMENTS—Special treatments are not described in ASTM A120 and pipe with special treatments is not normally to be found in jobbers' warehouse stocks. Special treatments consist of galvanizing after cutting to lengths, galvanizing on outside only, galvanizing on inside only, pipe and couplings galvanized after threading, galvanized coatings heavier than standard, tar base or asphalt base coatings on either inside or outside or both, addition of saturated fabrics over bituminous coatings, primer coatings, cement linings, pickling or mechanical cleaning followed by oiling. Steel pipe treated with these special finishes are normally available only on special order from the mill and frequently involve an additional cost and a longer time for delivery.



SOME FITTINGS USED WITH STEEL PIPE

Size (Nominal Inside Diameter)	O. D. to nearest 1/16th	Standard Weight Pipe: Thickness in	Standard Weight Pipe: Wt. in lbs. per L. Ft., Threaded and with Couplings	Standard Weight Pipe: Hydrostatic Test Pressures	Extra Strong Pipe: Thickness in.	Extra Strong Pipe: Wt. in lbs. per L. Ft., Plain Ends	Extra Strong Pipe: Hydrostatic Test Pressures	Double Extra Strong Pipe: Thickness in	Double Extra Strong Pipe: Wt. in lbs. per L. Ft., Plain Ends	Double Extra Strong Pipe: Hydrostatic Test Pressures
		Butt Welded								
1/8	7/16	0.068	0.24	700	0.095	0.31	850	—	—	1,000
1/4	9/16	0.088	0.42		0.119	0.54		—	—	
3/8	11/16	0.091	0.57		0.126	0.74		—	—	
1/2	13/16	0.109	0.85		0.147	1.09		0.294	1.71	
3/4	1 1/16	0.113	1.13		0.154	1.47		0.308	2.44	
1	1 5/16	0.133	1.68		0.179	2.17		0.358	3.66	
		Lap-Welded, Electric-Welded and Seamless Grade A								
1¼	1 11/16	0.140	2.28	800	0.191	3.00	1,100	0.382	5.21	1,200
1½	1 15/16	0.145	2.73		0.200	3.63		0.400	6.41	
2	2 3/8	0.154	3.68		0.218	5.02		0.436	9.03	
2½	2 7/8	0.203	5.82		0.276	7.66		0.552	13.70	
3	3½	0.216	7.62		0.300	10.25		0.600	18.58	
3½	4	0.226	9.20	1,200	0.318	12.51	1,700	—	—	2,000
4	4½	0.237	10.89		0.337	14.98		0.674	27.54	
5	5 9/16	0.258	14.81		0.375	20.78		0.750	38.55	
6	6 5/8	0.280	19.18		0.432	28.57		0.864	53.16	
8	8 5/8	0.322	28.81		0.500	43.39		0.875	72.42	2,800
10	10¾	0.365	41.13	1,000	—	—	—	—	—	—
12	12¾	0.375	50.71		—	—	—	—	—	—

REFERENCES—A.I.A. material filed under index 29B3.

American Society for Testing Materials Standard Specification No. A120-42, "Black and Hot-dipped Zinc-coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses."

American Iron and Steel Institute, Steel Products Manual, "Section 18, Steel Tubular Products."

Bulletin No. 77 of the Engineering Experiment Station of the University of Wisconsin (1933), "Interior Water Supply Piping for Residential Buildings," by F. M. Dawson and J. S. Bowman.

Industrial and Engineering Chemistry, Volume 19 (1927), page 777 et seq, "Treatment of Water to Prevent Corrosion," by J. R. Baylis.

Transactions of the American Society of Heating and Ventilating Engineers, Volume 24 (1918), page 217 et seq, "Preservation of Hot Water Supply Pipe," by J. O. Handy.

Bureau of Standards Journal of Research, Volume 7 (1931) page 1 et seq, "Soil Corrosion Studies 1930—Rates of Corrosion and Pitting of Bare Ferrous Specimens," by K. H. Logan and V. A. Grodsky.

NOTE—Although ASTM Specification No. A120 which serves as a basis for this BPF does not cover wrought iron or alloyed steel pipe, they should be mentioned here. The addition of from 0.20% to 0.35% of copper provides increased resistance to atmospheric corrosion and various other types as well. The addition of copper and molybdenum increases both resistance to various types of corrosion as well as increasing the tensile strength. The corrosion resistance of wrought iron pipe is well established. The first cost of these types of pipe is higher than steel. They are made in standard, extra heavy and double extra heavy in dimensions the same as steel pipe. Fittings for the alloyed pipe are usually required to be of the same analysis as the pipe.

PIPE, Welded and Seamless Steel, for Ordinary Uses

DESCRIPTION OF STEEL PIPE FOR SPECIAL USES—Different types of steel pipe are made for a wide variety of special requirements such as close coiling, bending, high pressure service, compression, tension, unusual corrosion resistance, flanging, impact, low temperature, plating, and many others. Standard specifications covering these types of pipe for special uses have been formulated by many organizations, among which are:

American Society for Testing Materials
Association of American Railroads
American Petroleum Institute
American Standards Association
American Society of Mechanical Engineers
American Waterworks Association
Director of Procurement of the U. S.
U. S. Navy

Both physical and chemical tests are usually described in such specifications. Any of these special pipes are normally made by pipe manufacturers on order to conform to the specifications. Pipe meeting such specifications may or may not be regularly found in jobbers' warehouses. In this BPF we are not concerned with any of these special steel pipes or the specifications for them.

DESCRIPTION OF STEEL PIPE FOR ORDINARY USES—The foregoing brief description is given so that the steel pipe for special uses will not be confused with Steel Pipe for Ordinary Uses, with which we deal in this BPF, and with which we are familiar in the plumbing and heating work in buildings. Steel Pipe for Ordinary Uses should conform to ASTM Specification A120 which covers black and hot-dipped galvanized, welded and seamless, unalloyed steel pipe from ⅛" to 12" nominal inside diameter, purchased mainly from jobbers' warehouse stocks. Hydrostatic pressure tests are the only physical tests made on pipe conforming to ASTM A120 because the pipe is intended for ordinary uses where special properties are not required. Steel Pipe for Ordinary Uses is manufactured from mild, ductile steel made by the open hearth or Bessemer process.

Steel Pipe for Ordinary Uses is available in a range of diameters, wall thicknesses, surface treatments and methods of manufacture.

LENGTHS—Standard weight pipe comes in random lengths from 16 to 22 feet. Not more than 5% of the total number of lengths may be "jointers," which are two pieces tightly coupled together. Continuously welded pipe comes in 21 ft. lengths.

Extra strong and double extra strong pipe comes in random lengths of 12 to 22 feet. Five per cent may be in lengths of 6 to 12 feet.

WELDED AND SEAMLESS TYPES—Steel pipe 3" and less in diameter is usually butt-welded, sizes 3½" and over being lap-welded. In the *butt-welding* process the skelp with square or slightly beveled edges is drawn from the furnace through a funnel-shaped welding die or through welding rolls during which operation it is bent into tubular form and the edges are brought together with sufficient pressure to weld them.

In the *lap-welding* process the skelp, with scarfed or beveled edges is heated and bent to tubular form with the edges overlapping, and is then reheated and passed over a mandrel between rolls which compress and weld the lapping edges.

Seamless pipe conforming to A120 is made by piercing solid round steel billets and rolling.

USES FOR BLACK STEEL PIPE—Black pipe is the term commonly applied to uncoated pipe and to pipe given an ordinary air-drying lacquer coating for protection against rust in shipment. The application of the lacquer coating is regular mill practice. Pipe for natural and manufactured gas for cooking and illumination; for low pressure steam heating systems; for air lines and ammonia; is generally furnished black.

USES FOR GALVANIZED PIPE—Zinc, applied by the hot dipped galvanizing process is widely used for protection against corrosion. As regular practice, galvanized steel and couplings are hot galvanized prior to threading. The threading operation, of course, removes the coating from the threaded areas. Regular practice is to furnish galvanized pipe in accordance with the galvanizing requirements given in ASTM Specification A120 and the test procedure given in that specification for determining weight of coating is standard in the industry. Galvanized steel pipe is used for hot and cold water supply lines, plumbing vent lines, and waste lines *above ground.

PHYSICAL PROPERTIES—Since warehouse stocks of steel pipe conforming to A120 are not manufactured to meet physical tests, the following figures are approximate.

Tensile strength, minimum pounds per square inch	45,000
Yield point or elastic limit, minimum pounds per square inch	25,000
Coefficient of thermal expansion, ins./in./F°	.00000674

INSTALLATION—In using cutting and threading tools the manufacturer's recommendations for use should be carefully observed by the mechanics. Joint compound should be used to facilitate assembly and to render pipe connections tight and leakproof. The ends of all threaded pipe should be thoroughly reamed to eliminate burrs. Where water is to be heated for domestic or other uses it is desirable to employ an open or deaerating type of heater which permits dissolved gases in the water to escape, to minimize corrosion. Only ferrous fittings should be used. Pipe covering should be installed so as to prevent air from reaching the pipe surface. Where air gets beneath insulation, condensation can occur on the metal where it becomes acid due to absorption of atmospheric gases.

*Pipe meeting the same dimensional and hydrostatic requirements as specified in A120 but with special coatings is available from the mills for underground service. See "Special Treatments" over page.

COST—The first cost of black and galvanized steel pipe is lower than other piping materials. Selection of steel pipe will rest largely upon a consideration of expected life under existing service conditions balanced against cost. The following figures are quoted from the current 1944 catalog of a national retail mail order establishment and represent a rough approximation of the average price to an owner for the standard weight pipe at the site. Other sizes of pipe and fittings will be roughly proportional to these figures according to weight.

Standard Weight	½" *I.D.*	1½" *I.D.*
Black pipe per foot	5¼¢	14½¢
Black elbow	9¢	25¢
Galvanized pipe per foot	6½¢	19¢
Galvanized elbow	11¢	35¢

TRADE ASSOCIATION—American Iron and Steel Institute, E. H. Thwaits, Secretary of Pipe Committee, 350 5th Av., N. Y. C.

SOURCES OF SUPPLY—The omission of any manufacturer from this list emphatically is not to be construed as an indication that the omission is because his product in any way lacks merit.

Bethlehem Steel Co., Bethlehem, Pa.
A. M. Byers Co., Pittsburgh, Pa.
Fretz-Moon Tube Co., Butler, Pa.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
LaClede Steel Co., St. Louis, Mo.
Mercer Tube & Mfg., Sharon, Pa.
National Tube Co., Pittsburgh
Republic Steel Corp., Cleveland
Sharon Tube Co., Sharon, Pa.
Spang, Chalfont & Co., Pittsburgh
Wheatland Tube Co., Philadelphia, Pa.
Wheeling Steel Corp., Wheeling, W. Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio

LOCAL SERVICE—Fill in the blank spaces provided below with the names of manufacturers' local representatives who can assist in problems involving the use of steel pipe.

Product_____
Local Agency_____
Representative_____
Address_____
Telephone_____

Product_____
Local Agency_____
Representative_____
Address_____
Telephone_____

These data represent accepted practice in manufacture but do not necessarily mean that such products are currently available for civilian use.

Perspectives

The Diffident Gascon: Antonin Raymond

Once, in the course of what was, for him, a ruminative conversation, Tony Raymond unexpectedly said: "I would like to do jazz architecture." One of his designers, thinking over the remark, decided that Raymond had not merely been indulging his proclivity for shocking people into thought; he had meant what he said, quite literally and out of a profound belief. Jazz is to him a saving grace in our awkward modern times, an emanation truly popular in spite of the commercialism which invests it. In the apparent incongruity of such a statement lies one of the reasons why there seems to be a mystery about Raymond.

Many people find him too complex for fathoming. Perhaps the mystery is heightened by his effect upon those with whom he comes in contact: superficial acquaintance may lead to doubt of, occasionally to disgust for, that mountebank, Raymond; close association usually breeds fanatical devotion to him. Such violent partisanship obscures the startling, yet biologically possible, fact that Raymond is above all a human being. Occasionally he seems willing to cloud that fact. His certainty is often Olympian.

Antonin Raymond is of Czech origin, but he is far from being a refugee. He landed in this country in 1910, and went to work for Cass Gilbert on the design of the Woolworth Building, New York's first real skyscraper. In speaking now of those days, Raymond declares vehemently that he was a modernist even then; that true modernism goes deeper than surface appearance, deeper than mere functionalism, that it must express the state of our culture—and before you know it you are off, bewilderedly, on a philosophical voyage through turbulent waters at the mercy of a helmsman whose Czech accent sometimes betrays him, whose eyes are fierce glints in a brown, ascetic face, who might, you fear, be a little drunk on his thoughts.

Just so suddenly is Raymond's philosophy of living and working likely to catch you up. His apparent contradictions in word and action snare the unprepared listener, and by the time one paradox is found to be not so baffling after all, he reveals another.

For instance, he has a tremendous capacity for friendship—real, deep, lasting. Ask any who have worked for him any length of time. But disappointment in friends hurts him terribly, and for fear of disappointments he finds it extraordinarily difficult to meet new people. Formerly, a draftsman striking Raymond personally for a job was quite apt to be taken on at the draftsman's own valuation, if there was an opening and the man was at all personable; but in recent years, Raymond has come to understand the difficulties into which such a failing can lead him, and he usually says, before the man is hired: "You go in and talk to the boys. They do the hiring here. You will have to work with them, you know."

Another component of such an action is the difficulty he experiences in making routine decisions. Not that he is unsure; far from it; but Raymond proceeds on the astounding theory that the man hired to do a certain job will do it. Yet unsatisfactory decisions, however small, do not escape him and must be verified. However, about a new letterhead, for example, he may say: "Yes, that one's fine. So is that—and that." Which leaves the chap with the letterhead problem exactly where he was before he asked the boss to do his work for him.

This carries over into unexpected phases of his work, as well. He designs the furniture as well as the house; and often a rough sketch, plus a few odds and ends of left-over lumber, plus the ingenuity of the carpenter on the job, results in chairs, benches, tables, staircases, etc., which uniquely fit that house and its occupants. The carpenter, Raymond believes, knows his wood better than a draftsman possibly could. But this attitude does not prevent Antonin Raymond from inventing new,

simpler, better ways of doing things. He has perfected a type of window sash which is beautifully simple and weathertight. Sliding doors on his cabinet work are apt to be extremely simple, yet marvelously ingenious.

In large as well as small things, Raymond's work, for no matter what purpose, almost invariably provides a direct solution of the problems posed by the needs of the people and processes which will occupy the completed buildings. He has been "called" occasionally for seeming flaws in his work; but, though he may not consider carping criticism worth answering directly, he knows he is right. When pinned down, he *can* answer directly. A critical PENCIL POINTS subscriber once questioned the design of a fireplace in one of his houses. The fireplace was several inches above floor level, set into a wall, with no front hearth. For its size it was quite deep. It was designed to warm the body of the individual before it, not his shins or calves. There were no flimsy draperies or upholstery materials near by; the floor was not carpeted; and Raymond knows that fires need not be built of wood which will explode sparks out of the fireplace. Above all, Raymond knew his client and what the client wanted that fireplace to do. He did not reply when the query was passed on to him, except to the effect that the fireplace had been designed to appear and function as it did. The conditions here outlined, he felt, should have been patent to anyone.

Impatience with the restricted mind is part of the reason for his penchant for the shocking statement. He must recognize that this habit calls attention to him, and not always favorable attention either. But he seems not to worry too much over its minus values; the plus of finding a few people who stand the acid test, and years of habit, have made it second nature particularly after the first highball. He once made an editor of an architectural magazine, whom he had just met, extremely uncomfortable by suddenly stating, at dinner, in a very loud voice, that *no* architectural magazine was any good. They were all too commercial! When the editor, half offended, half amused, and totally at a loss, took too long in deciding to be well-bred and ignore such an outburst, Raymond disgustedly devoted himself to the lady on his left for the remainder of the evening. At another time, he told an architectural publisher who was paying for his lunch that his magazine was lousy. Thumbing it through, "It's all tr-r-ripe!" he said.

While his initial blasts are so unconventional, even rude, pursuit of the blasted subject usually finds him reasonable enough if he and his conversational opponent can find an intellectual plane strong enough to support them both. He can be generous in victory, though hardly likely to yield points on which he holds strong convictions; and he has been known to retire prudently, even abruptly, from arguments in which he has been worsted.

After some years in this country, Antonin Raymond went to the Orient—India, China, Japan—to practice. He designed and built there numerous important buildings, including the St. Luke's International Medical Center; The Woman's Christian College; an United States Embassy; an U.S.S.R. Embassy; a French Embassy; a Socony Office Building. The simplicity of Japanese domestic architecture, the exquisite and ingenious craftsmanship of the native artisans, and their ability to compose beauty out of essential, commonplace items, were much to his liking. Other things could not have been so pleasing, although he does not say much about them. For one thing, the Raymonds' first child died while the family was in the East. (Mrs. Raymond returned to this country for the birth of their second, a son, Claude, who is now in the service.) At any rate, Raymond returned to the United States to practice some years before the outbreak of the present war.

When war came, he spent no time moaning about the architect's place in the war effort when that was the current professional wail. He helped to organize the firm of Tuttle, Seelye, Place, and Raymond—and notice that his own name is the last in the firm's title. In its inception the young designers in his office feel that they had an active part. It is as much "their" office as Raymond's ever was—and Raymond's office was always theirs. The firm has done a tremendous amount of war work, including military work of various kinds which cannot be described in detail for obvious reasons. His actual contribution toward the prosecution of the war is greater than that of most of the other architectural offices in the country, and his success in getting contracts must be revealing to many who once considered him just another irrational esthete.

In explanation he will point to a drawing of a huge Army camp and state emphatically that he makes no attempt to introduce esthetics into it; it is a practical job—first of all, it must work. Apparently his vehemence in private argument among those who consider themselves his confrères is discarded in conversation with clients. Certainly he grasps the fundamentals of a design problem instantly. That he can get such a hard-boiled client as the U. S. Army to utilize his talent for beautiful organization of three-dimensional space is surely a tribute to this passionate man with an accent.

Tony Raymond's story would be incomplete without mention of Mrs. Raymond. Where he is dark, spare, with little or no gray in his hair, tanned but not excessively "out-doorish" in appearance, and truly a sophisticate, one's first impression of Mrs. Raymond is of capability. She is large, not tall, with shingled graying hair and a face that is weatherbeaten, apparently from running the Raymond farm at New Hope, Pennsylvania. She is an artist of considerable ability, has won awards for printed textiles, is a good draftsman, excellent at thinking through problems on the drafting board, and has worked on many of Raymond's projects.

The New Hope farm is decidedly not a dilettante enterprise. It is several hundred acres in extent and boasts a good-sized herd of blooded cattle which Raymond succeeded in having registered last year. Although it has cost a pretty penny—it is possibly over-mechanized, equipped with station wagons, trucks, tractors, besides the usual machinery—last year it broke even financially; this year it seems about to return a profit, and in succeeding years should bring in a steady return. While he was building it up in the years just after his return to America, Raymond conducted his famous New Hope experiment in conjunction with the farm.

The New Hope experiment came about for several reasons, primarily because Raymond believes that intimate contact with—thorough understanding of—the type of practical, rewarding creative activity afforded by farm life is essential to other creative arts. At one period soon after his return he spent much of his time there; now he leaves the city Friday evenings for the farm and returns the following week. In the farm's earlier years the Raymonds gathered about them a group of young architectural men, some of them married, who literally helped build up the place, received board and lodging, learned much from the Raymonds, and practiced collaborative architecture from which the revenue was divided among the members of the group. During at least part of this time Raymond was re-establishing his New York office; to set himself up in business again after several years' absence in the Orient was quite a task. The New Hope group idea has been assailed by many who were not of it: those who composed it, almost without exception, are satisfied with their experience there.

(To be concluded next month)

Office Building American Red Cross Los Angeles, Calif.

SUMNER SPAULDING, A.I.A., ARCHITECT

Photos by Art Center School and Julius Shulman

With the outbreak of war increased facilities for Red Cross headquarters became necessities in every community in the United States. Nowhere was this more true than in California, where for a while invasion from the Pacific seemed an imminent possibility. Yet for many months activities boomed in cramped space; staff workers were jostled by members of the various corps and departments, each trying to get his own important job done—and somehow succeeding despite inefficient quarters.

Like the military and civilian governmental agencies, the Red Cross mushroomed into a gigantic organization. As the Army and Navy enlarged, the Red Cross Home Service Corps, which is the sole authorized agency for direct contact between folks at home and men in service, became an ever more important unit; Canteen Corps in many chapters took on additional duties as the food rationing program made instruction in dietetics and preserving food imperative and danger of invasion-produced catastrophe was reduced. Shortages of nurses, of hospital help of various kinds; the necessity for teaching first aid and home nursing to a populace which suddenly had too few doctors and registered nurses at its disposal—all these needed at least adequate facilities.

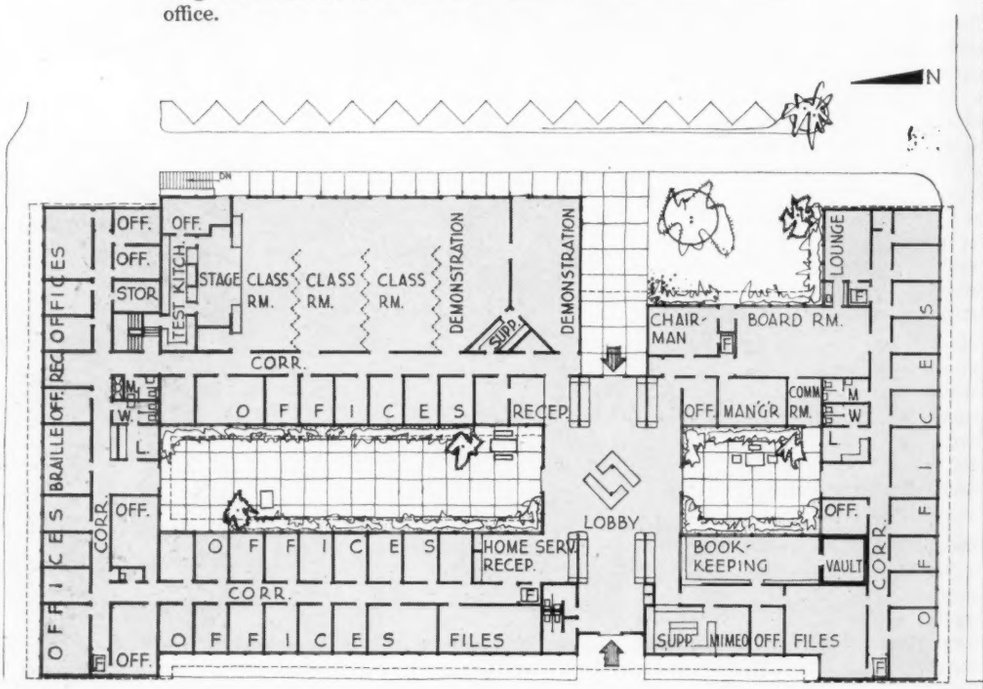
The Los Angeles headquarters was first discussed with the architect late in 1941, when the local need of proper space had become overwhelming and activities had begun to form a recognizable pattern. Within four months the building was completed—and this in the face of wartime shortages of building materials and equipment.

Los Angeles Red Cross Building
Sumner Spaulding, Architect

Construction is extremely simple, and modular. The building is wood-framed, with plywood surfacing inside and out. Wall framing has 4-by-4-inch structural members placed 9 feet on centers to take stock plywood panels in 9-ft. lengths. This determines the widths of small offices; 8-ft. panels were discarded; these made the offices too narrow. The continuous bands of windows are of wood, with alternate fixed and sliding sash, one of each per office.

Under the east-west block at the north end of the building is the only excavated portion of the basement. At the east end of this is a garage, 25 by 25 feet, through which deliveries of supplies, etc., are made to storage space which occupies most of the rest of the basement. At the foot of the stairs are the electrical panel board, domestic hot water heater, and the largest of the six furnaces. The remainder are small units located in closets (marked "F" on plan). All supply warmed air to plenum chambers formed by furring down the corridor ceilings. Grilles furnish heat to each office.

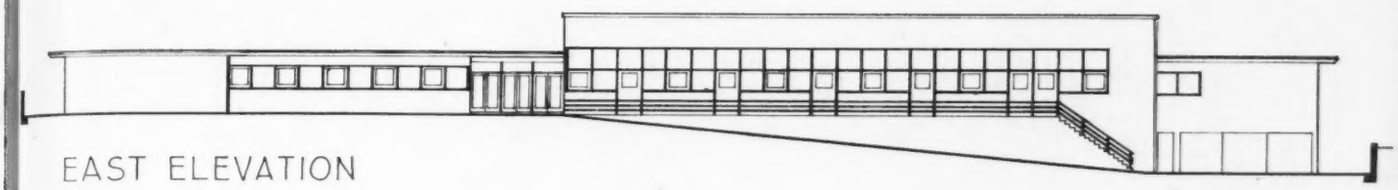
The auditorium block is spanned by wood trusses from exterior wall to exterior wall; in other cases, rafters support the roof and ceiling. Air space between the rafters is vented and screened at the eaves. Ceilings are of insulation board.



MAIN FLOOR PLAN

0 10 20 30 40 50
SCALE

Principal entrance from the parking space to the east; at left is the wing containing the small lounge.



EAST ELEVATION

The plan divides itself cleanly into two areas: at the south end, a block of executive and administrative offices; at the north, public and semi-public offices for the corps and departments. Each unit surrounds its own court; these and internal corridors provide circulation. The lobby was designed to receive people from the parking space on the east and the thoroughfare on the west, and to separate the two office units. The information desk in its center also acts as a control point. The only structural steel in the building spans the lobby from north to south; only short lengths could be obtained, so lally columns were introduced and were incorporated into the information desk and the built-in seats which flank the entrances (see details, pp. 81-84).

The Home Service department needs many cubicles for private interviews; these line the corridor leading north from its reception room, and at times so many have been needed that the department has spilled over into the transverse office block to the north. East of the Braille office in this transverse block is the First Aid suite with (west to east) offices for volunteers, reception, secretary, and chairman of the corps.

The stage is for demonstrations; directly behind it is the kitchen, an interior, skylighted room. Auditorium can be subdivided into classrooms and demonstration rooms. Triangular closets in these rooms provide space for putting demonstration beds, etc., at an angle to students for greater clarity in teaching. They also help to brace the structure against earthquake stresses. For this same purpose, a few partitions between offices extend to the ceiling; but most are only eight feet high. This helps with the ventilation problem.

Section, above, demonstrates more clearly than the photographs the change in grade and the continuity of the window bands.

Photos at left and above show the east side and entrance. Balcony outside the auditorium serves the exit doors.

Los Angeles Red Cross Building

Sumner Spaulding, Architect

At left, entrance from Menlo Avenue; below, view toward information desk, looking toward an interior court. Screens between benches built back-to-back are panelled part way out from the walls to give privacy to the corridors and entrances to departments.

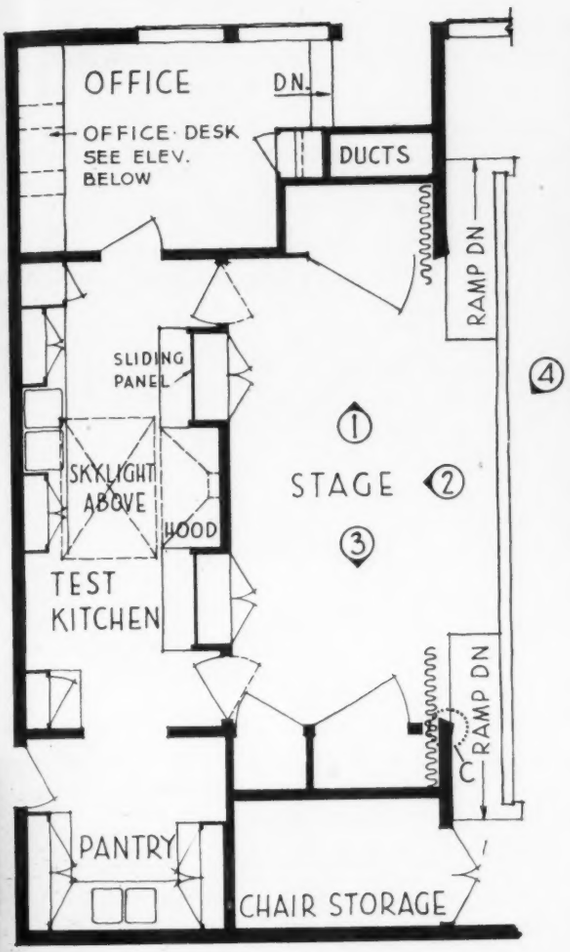
From whatever angle it is approached, the information desk controls traffic. It is faced with combed plywood, has a plastic-surfaced top (see details, pp. 81-84).

Lighting in the lobby is provided by flush ceiling fixtures. Throughout the building Red Cross red is used as an accent color; the principal color is gray with a slightly greenish cast.

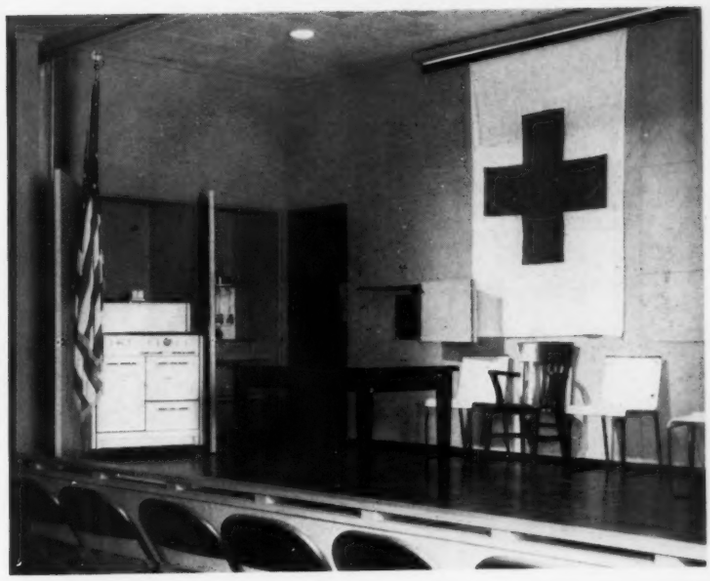
Los Angeles Red Cross Building
Sumner Spaulding, Architect

The demonstration stage, shown in detail on page 81, is a marvel of ingenious planning with simple equipment. Pass doors, unobtrusive when closed, connect it directly with the kitchen behind; it is lined with cupboards for storing supplies and equipment. Closets in the wings house a range and a table, both on casters so they can be rolled out for teaching purposes. Ramps rather than steps lead from the auditorium floor to the stage, so that heavy objects can be wheeled up or down easily, or a line of students might file past the object of a demonstration, for a close look, without the shuffling caused by using stairs. Footlights were not needed as this is not a place for theatrical presentations; but spotlights recessed in the auditorium ceiling supplement the general illumination provided by the lensed, flush, ceiling fixtures.

Above, left, publicity office, showing a typical two-window unit, 9 ft. wide. Below, court in the public and semi-public group. When the planting has had a little more time to grow, it will be an even more welcome relief from the busy offices where volunteers work under continual pressure. Fixtures under the eaves provide pleasant light at night.

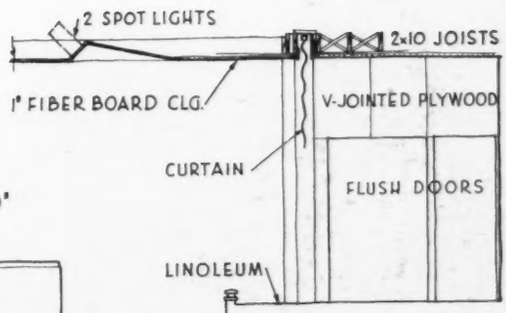


PLAN 1/8" = 1'-0"

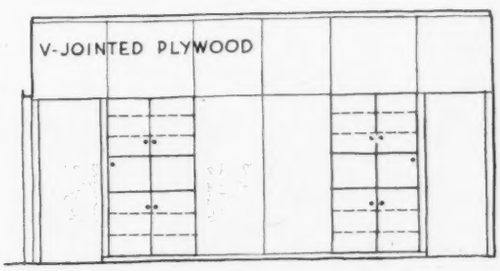


VIEW NO. 4

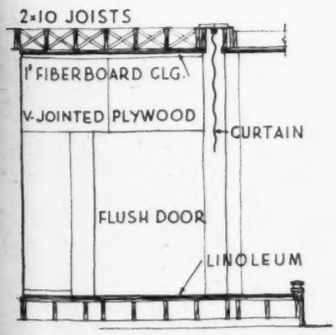
DET. 'C' 1½" = 1'-0"



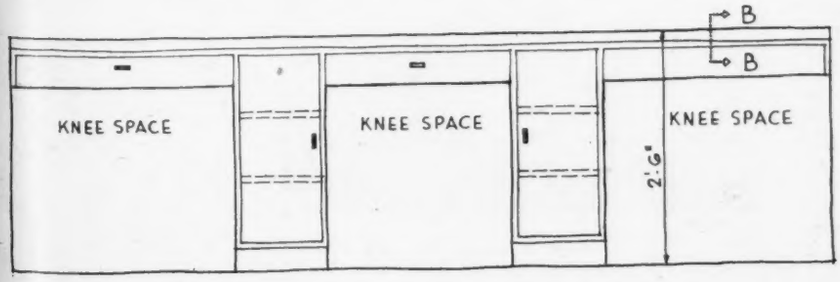
1/8" = 1'-0" VIEW NO. 3



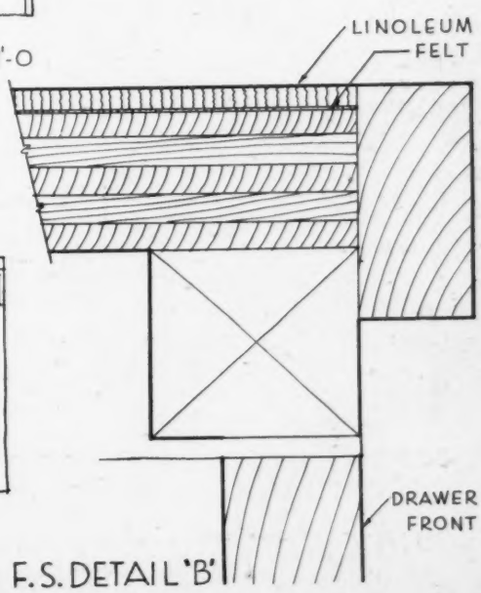
VIEW NO. 2 1/8" = 1'-0"



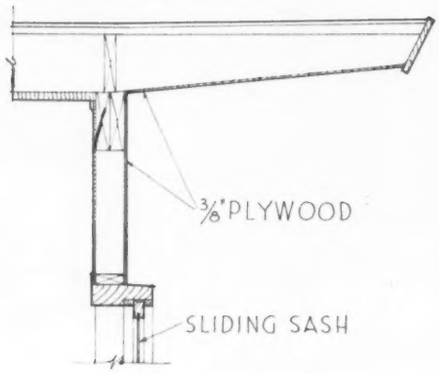
VIEW NO. 1 1/8" = 1'-0"



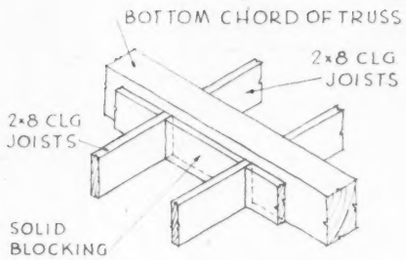
OFFICE DESK ½" = 1'-0"



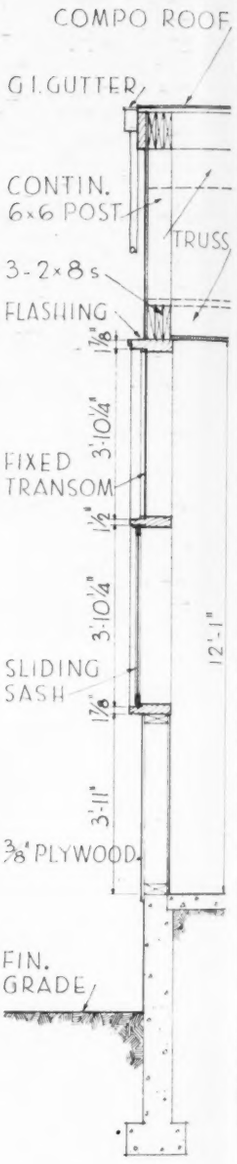
F.S. DETAIL 'B'



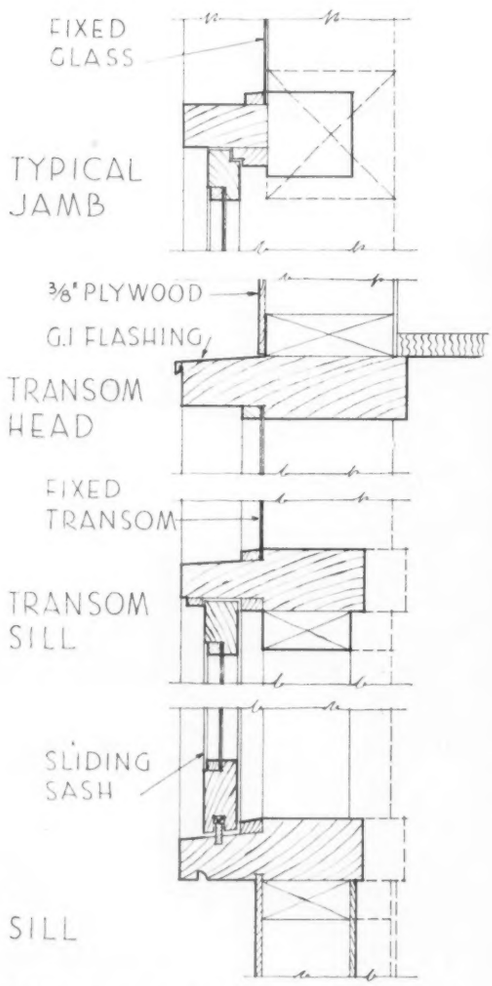
½"=1'-0" PART SECTION OF OFFICE WALL



END-NAIL AND TOE-NAIL JOISTS TO SOLID BLOCKING WITH 3-16d NAILS IN EACH. NAIL BLKG. TO TRUSS WITH 6-16d NAILS

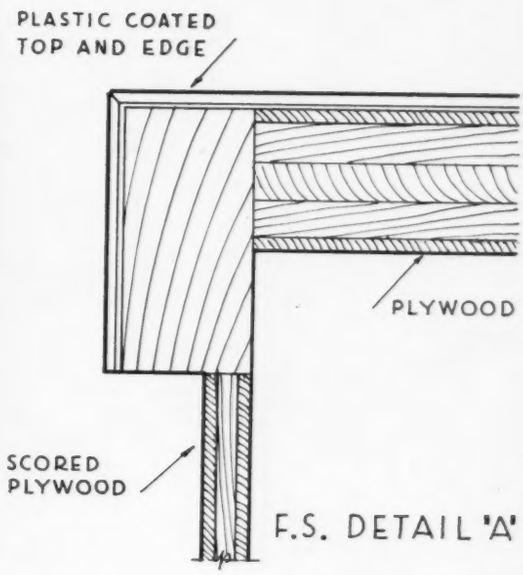


WALL SECTION AT CLASSROOMS
SCALE ¼"=1'-0"

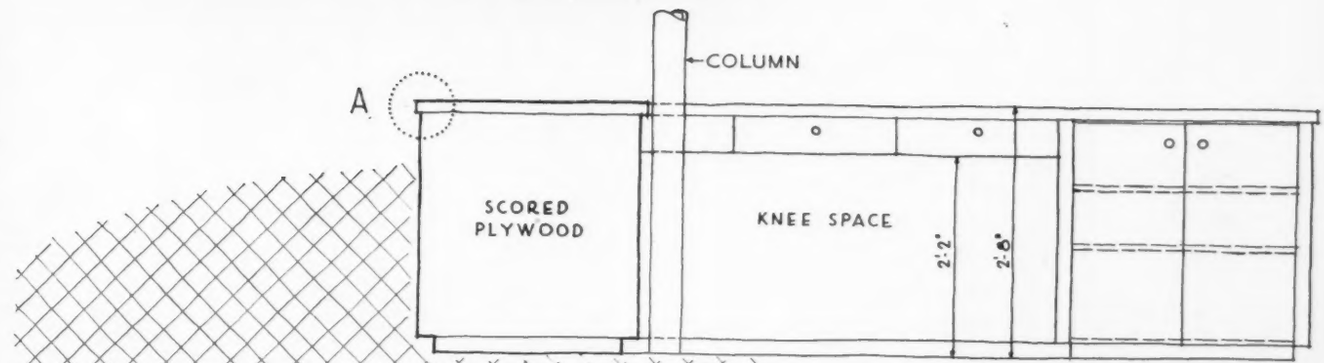


DOTTED LINES SHOW CONDITION AT CONTINUOUS 6×6 POST

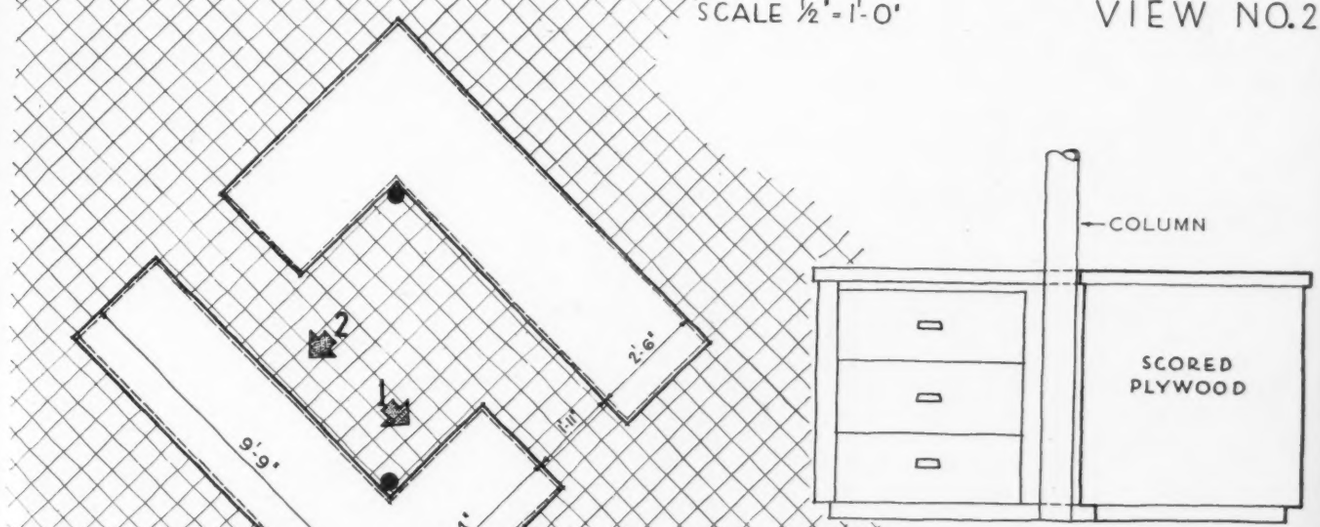
WINDOW DETAILS 1½"=1'-0"



F.S. DETAIL 'A'



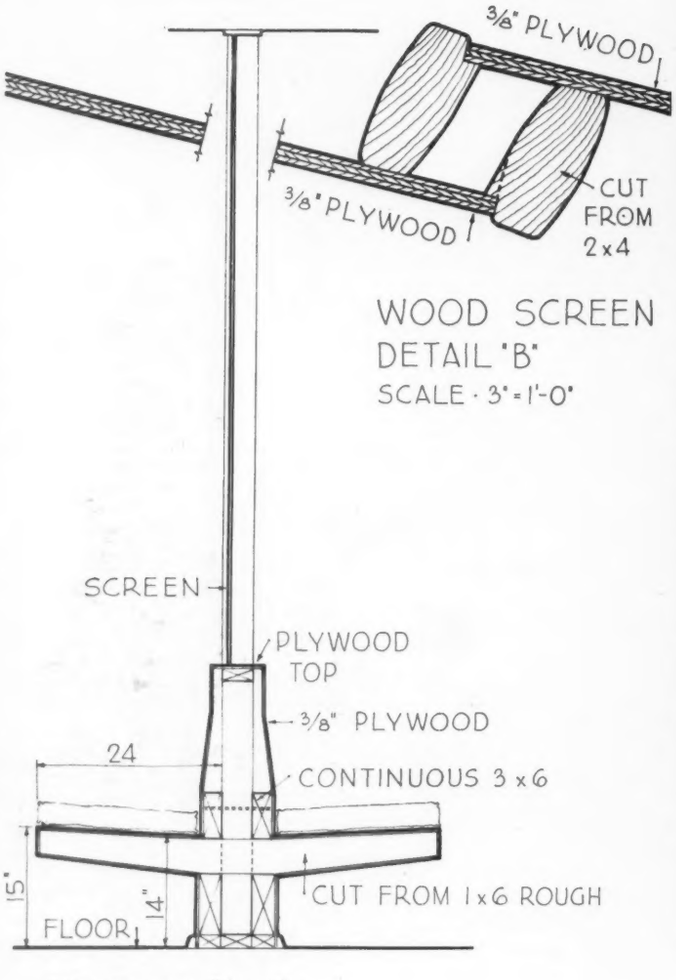
SCALE ½"=1'-0" VIEW NO.2



SCALE ½"=1'-0 VIEW NO.1

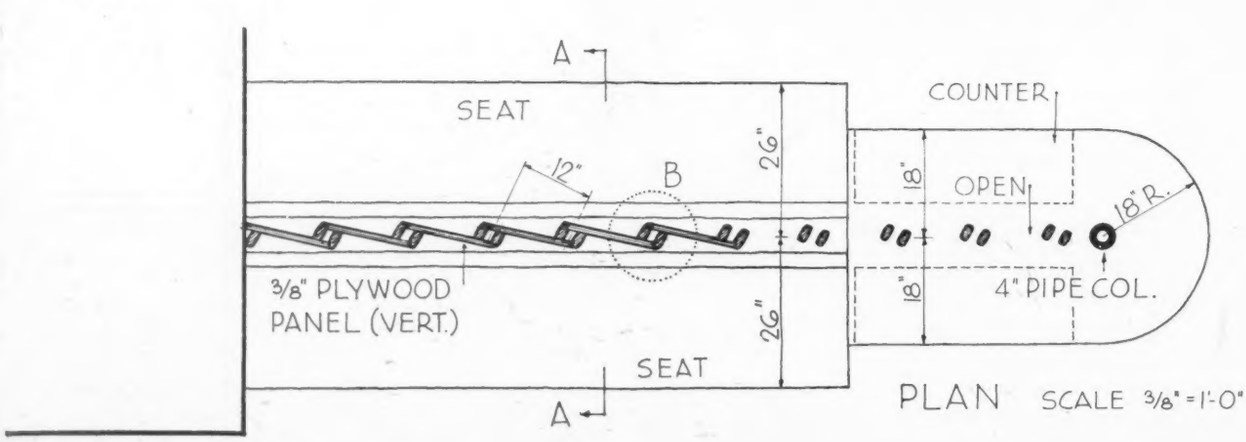
PLAN SCALE ¼"=1'-0"

Waiting Benches in Lobby, American Red Cross Building, Sumner Spaulding, A. I. A., Architect



WOOD SCREEN
DETAIL "B"
SCALE · 3" = 1'-0"

SECTION "A-A"
SCALE · ½" = 1'-0"



PLAN SCALE 3/8" = 1'-0"

Pittsburgh Housing Authority Designs and Installs 296 Ceramic Heaters in Broadhead Manor

BY MICHAEL ROSENAUER, F.R.I.B.A., A.I.A.

Our choice of methods of construction in this country before the war was practically free from considerations of scarcity of materials of any sort. This is in contrast to prewar conditions in many European countries where methods of construction have always been greatly affected by shortages in certain essential materials. The abundance we enjoyed has now been interfered with by urgent needs of war. Therefore an investigation into structural methods employed in countries where the dearth of certain materials was a permanent condition throughout history is of interest.

The importance of research in methods of construction appropriate to the present scarcity of materials was impressed upon the architects of the new Broadhead Manor project of the Pittsburgh Housing Authority by the Administrator, Dr. B. J. Hovde. He wished that such studies should not stop at merely satisfying the requirements for conserving critical materials laid down by the WPB, but that they should surpass them if possible without sacrifice of structure or design. Broadhead Manor is a permanent housing project, serving as war housing during the emergency, and the restriction of materials therefore presented an especially difficult problem.

The shortage of steel and iron in some European countries led to the development and use through the centuries of a great variety of heating devices made principally of other materials. Glazed tiles in various shapes and sizes came to be favored for building ovens. Their architectural arrangement passed through the various styles of European architecture, and ceramic tile stoves became distinct features of interior decoration. Many of them are masterpieces of sculptural decoration and are treasured possessions of old castles and museums in Europe.

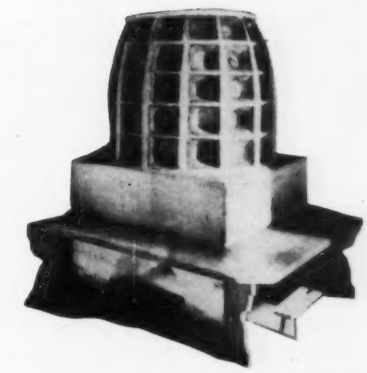
Placed along the wall or in the corner of the room, the firebox of the European ceramic tile stove was accessible either from inside the room or from a corridor next to the room. The fuel gases had to pass various baffles and were carried through a number of channels, laid out intricately behind the surface of the stove, thus transmitting a maximum of their heating capacity into the radiating surface before passing into the flue. In searching for a solution to our immediate problem of designing a heating apparatus with a minimum of metal, it occurred to us that here was a promising prototype.

The European glazed tile stoves were used for one room or for two adjoining rooms only. I do not recall any example where one unit had to heat rooms on different floor levels. But for their application in a housing project, it did not seem that a strict adherence to the European example would be either necessary or advantageous. The actual design we arrived at is shown by the drawing (page 86).

As heat remains in the gases produced by combustion when they enter the flue, extra use of this heating capacity can be made for the rooms of the second story, by the simple device of surfacing the flue walls with glazed tiles towards the rooms of the second floor. The location of the heater is such that on the first floor its glazed surfaces heat living room and kitchen, whereas on the second floor the two adjoining bedrooms are heated by the glazed surfaces of the flue. It was not complicated to arrange baffles in such a manner that both floors could receive a calculated amount of heat. As we did not want to introduce unnecessary risks into this first venture, we restricted the application of our ceramic tile heater to units with not more than two bedrooms on the second floor. We rather regret now that we did not use the heater in the three- and four-bedroom units since experience demonstrated its efficiency, and air ducts on the second floor could have been added for heating bedrooms not directly adjoining the flue.

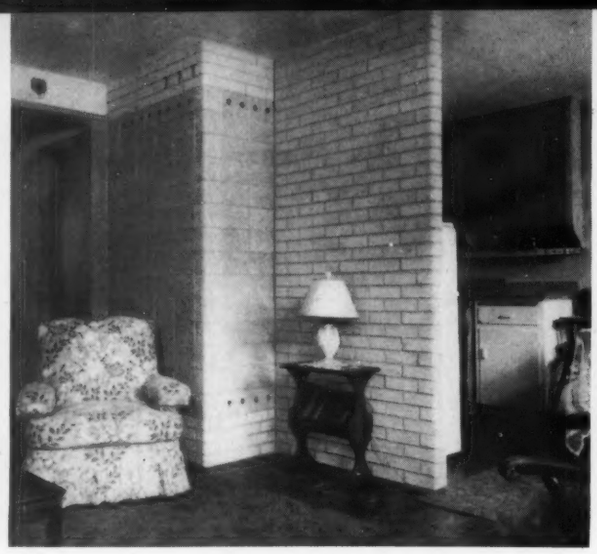
The manipulation of heating is as simple as with any other stove, but considerably cleaner. The coal bin is installed inside the house and opposite the firebox (which opens to a passageway) so that fuel can be shovelled directly into it. With this arrangement, carrying coal and ashes through the living room is avoided. The glazed surfaces of the heater can be wiped and kept clean with little effort.

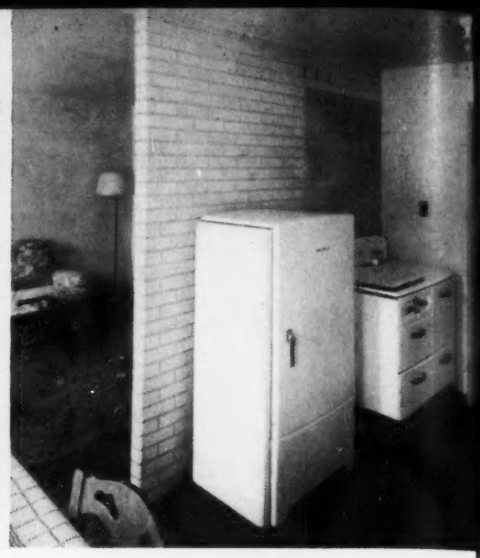
The new ceramic tile space heater represents more of a saving on critical materials than does the most economi-



Avery Library, Columbia Univ.

Above, two ceramic tile heaters used in castles in the Tyrol; simpler forms, such as the top one, are still prized articles of furniture in many parts of central Europe. Below, the ceramic heater designed for Broadhead Manor. For details, see following page.





Left, above, a cast iron heater from central Europe, invented in 1728 by Johann Jacob Schuebler. At right, views of the Broadhead Manor heater from living room and dining space.

cally designed space heater on the market. It increases the livability of the room by the comforting effect of heat radiation emitted by glazed surfaces which are not obtrusive. The tiled surfaces merge so completely with the adjoining wall surfaces that a distinguished visiting architect, interested in the heater and looking directly at it, inquired: "Where is it?"

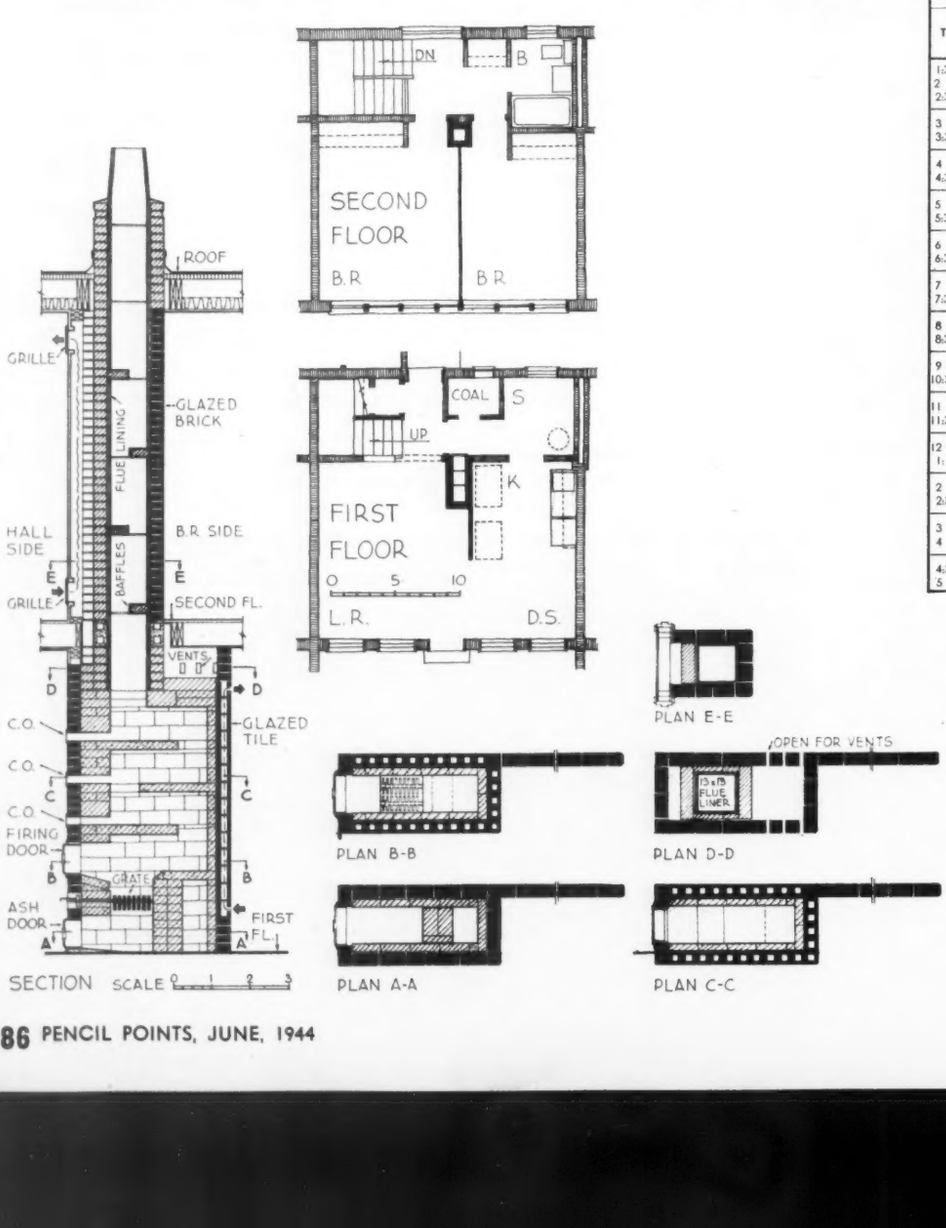
Whereas in Europe the tiles used for ceramic tile ovens are the product of highly specialized manufacture, we were compelled to design our units to be built from standard non-specialized American materials. We used readily available buff tiles of pleasant appearance. It will be a future possibility to apply tiles in various colors and forms. European tiles have for long been marked by a great variety of moulded forms, aiming at a maximum of radiating surface.

We used hollow tiles on the first floor to keep the surface temperature within advisable limits. By arranging holes on bottom and top of the communicating vertical cavities of the tiles, we were able to provide convection to supple-

(Continued on page 118)

TESTS WITH BITUMINOUS COAL			
Date of Test		1-19-44	1-20-44
Calorific Value of Fuel	Btu/lb	14,000	14,000
Estimated Loss, Combustible in Ash		700	700
Net Cal. Value	Btu/lb	13,300	13,300
Fuel Burned	lb	121.7	52.5
Heat Input	Btu	1,620,000	700,000
Co_2 in Flue Gas, Avg.	%	3.1	3.0
Flue Gas Temp., Avg.	°F	515	590
Estimated Efficiency	%	40	32.5
Available Heat	Btu	647,000	227,000
Heat Stored in Chimney	Btu	600,000	Not known
Heat Output	Btu	47,000	Not known
Heat Output, Avg.	Btu/Hr	7,830	Not known
Avg. Air Temp. Diff. Ins. and Outside House	°F	13	42.5
Estimated House Heat Loss	Btu/Hr	7,400	24,000
Heat Absorbed by House Walls and Unaccounted for	Btu/Hr	430	Not known

		Mean Temperature °F at Head Height		Weight of Fuel (lbs.)		Stack Conditions	
Time	Temp. of Out Door	Dwn. Sts.	Up. Sts.	Fired	Total	Temp °F.	CO_2 %
1:30 PM	44	37	35				
2							
2:30				28.0	28.0		
3	45	38	37				
3:30				26.7	54.7		
4	44	40	37			242	3
4:30				29.5	84.2	563	4
5	40	45	40	37.5	121.7	453	4.5
5:30						519	
6	40	49	46				
6:30							
7	38	54	52			722	1
7:30							Mean 3.1
8	38	61	59				
8:30 PM						593	
9 AM	31	68	79	Banked Over Night			
10:30							
11	33	70	78	New Fire, Disco Fuel			
11:30				31.5	31.5		
12 N	36	69	77				
1:15 PM	39	73	80	30.6	30.6		
				Bituminous Coal			
2	41	76	82			541	3
2:30	41	80	84	21.9	52.5	554	2
3	41	83	87			627	3
4	41	87	90				
4:30						643	3
5	41	87	90			585	3



Hollow ceramic tiles which form the exterior surface of the heater have several functions: to reduce surface temperature, to provide convection heating (note inlet and outlet vents near floor and ceiling), to permit easy cleaning. Ceramic surface is an excellent radiator. In section, note baffles in flue which delay escaping gases until at least part of their heat is absorbed by the glazed brick chimney walls. Utilization of a heat source which is usually ignored in domestic work is perhaps the most important phase of the development. By using ducts, additional rooms could have been heated.

Measuring Urban Population Densities

A STUDY, PREPARED UNDER THE DIRECTION OF HENRY S. CHURCHILL, BY WILLIAM H. LUDLOW

This is the first portion of a longer study developed for the Citizens' Housing Council of New York, who will publish the entire work under the title, "Population Densities for New York City." The complete study contains data and proposals of which many relate particularly to New York; this section is in general applicable to most urban areas. In it an attempt is made to set up definitions which, though they may provide a uniform basis for discussing a subject of which widely varying interpretations have been made, are yet flexible enough to be used as guides for unusual cases.

Discussion of urban population densities is confused by the many ways in which densities can be measured. For a given area, there may be as many different density figures as there are figures. Before there can be realistic discussion of densities, there must be clear definition of the way these densities are computed. Although it is not expected that the definitions used in this study will become the last word or final authority in this field, they are intended to provide sufficient precision to give comparability, together with sufficient flexibility to meet the many varying conditions which may occur in different types of areas and projects, not only in New York City, but in other urban areas. No matter how carefully such definitions are worked out, however, there will always be circumstances where they do not fit exactly. In such cases they should be used as general guides rather than fixed rules; nor would such latitude be likely to create wide differences in the computed densities.

In any event, measure of density is only a crude index of livability. Site planning and design of buildings are also very important. However, assuming reasonably good design, it is expected that density figures computed according to the following definitions will provide at least one useful index of openness and amenities.

Urban densities are commonly computed by dividing the number of persons or families (or a measure of the bulk of building) on a given piece of land by the area of that land. Differences in measurement arise both in defining the limits of the area to be considered and in the method of counting persons or families, or measuring bulk of building. For example, Manhattan is often spoken of as having an average density of about 240 persons per gross acre. This is true if parks, commercial and industrial sections are omitted. If the total area of Manhattan is included, the average density is only about 135 persons per acre. If, on the other hand, only occupied dwelling lots are considered, the average density is 570 persons per acre.* Much of the difficulty in dealing with densities is due to failing to specify the type of density referred to and in lack of clear definitions of density measurements for various purposes.

Definitions of Area Terms

In the case of a large area such as a metropolitan region or municipality, density can serve, for planning purposes, an an aid in determining the size of central commercial areas, industrial areas, and public facilities. In the case of residential areas, it serves as a measure of light and air, and the amenities, utilities, schools, playgrounds, local business and other service facilities which should be provided. In general, the larger the land area to which density measurements are applied, the more types of land use which it is desirable to include. Similarly, the smaller the land area, the more types of land use generally excluded.

The area terms defined below have been limited to those which are likely to be most generally useful. According to the principle established above, they apply to areas successively smaller in size, and the variety of land uses is successively limited. For purposes of simplification, the terms have been divided into three major groups with variations within each group signified by an appropriate prefix word.

URBAN AREA (or METROPOLITAN AREA):

A single municipality, a large subdivision thereof, or a group of adjoining municipalities forming a metropolitan area.

Total urban area:

All land area within designated limits shall be included. Water area shall be excluded.

Developed urban area:

All land within designated limits shall be included, *except* land undeveloped for urban purposes, such as agricultural or unbuilt land, unopened streets, unbuildable or unusable land.

RESIDENTIAL AREA:

Residential sections of a metropolitan area, a single municipality, or a portion thereof at least large enough to support a school and a reasonably wide variety of business facilities and public and private institutions.

Developed residential area:

All land used for residence, local or incidental business, public and private institutions, playgrounds, athletic fields, and small parks shall be included. The following shall be *excluded*:

1. Industrial, railroad, and airport properties.

2. City-wide business districts (usually not applicable to cities of less than 25,000 population).

3. Large parks and parkways, cemeteries, golf courses, and other recreational or institutional uses. Playgrounds in large parks, however, may be allocated to the residential areas they serve.

4. Vacant land or land undeveloped for urban use.

Predominantly residential area:

Includes the same uses as developed residential areas, except that some mixture of the above excluded uses may be included to the extent that they occur as areas too small to be shown separately on the maps or by the survey procedure used.

NET OR GROSS AREA (of Dwelling Lots):

Lots, blocks, or groups of blocks; may be used also for whole municipalities if complete detailed surveys are made.

Net Area:*

Land used for dwellings and incidental service uses normally furnished on the dwelling lot shall be included, such as driveways, small storage garages, parking areas, heating plants for large projects, play space for small children. *Excluded* uses shall be Nos. 1 to 4 above and:

5. Public streets.

6. Local business not directly beneath dwelling space.

7. Garage space for 3 or more cars not directly below dwelling space.

8. Public parks, and playgrounds for older children.

9. Institutional facilities such as schools, churches, community buildings, unless located beneath or above dwelling space.

10. Vacant parcels, or parcels undeveloped for urban use.

Gross Area:

The same as net area except that public streets shall be included up to the center line of bounding streets. For certain qualifications of this, see text below, *Street Measurements.*

Of the above terms, *developed urban area* is much more precise than *total urban area* and should be used whenever the necessary data for computing are available. In land use surveys made by the New York Regional Plan Association, all areas with more than one house per acre were considered developed. Although this is a convenient limit, more exact data on vacant lots and the major use of each parcel of land makes possible the exclusion of all land not devoted to urban purposes.

Developed residential area forms a convenient basis on which to determine average residential densities for a whole city or major sections of a city. It includes not only the sites of dwelling

* *Net area* as here defined is approximately the same as *net site area* as used by the New York City Planning Commission in "Sections Showing Areas for Clearance, Replannnig and Low-rent Housing," adopted December 9, 1942. The City Planning Commission's definition is not entirely clear as to treatment of garages or stores that are included in residential structures and which are partly beneath and partly not beneath dwelling space.

structures but also the commercial, recreational, educational, religious and cultural facilities which are located in residential areas. These facilities generally serve those living in the same urban neighborhood. Some of them may cater to the whole city or even wider areas, such as an occasional outlying department store, hospital, museum, college or state institution. In many cases the difficulty of determining to what extent a given facility serves its immediate neighborhood, and to what extent a wider area, makes it impractical to attempt any definition on the basis of service area. As a practical matter, if all large parcels are excluded which obviously do not serve more than the general section in which they are located, the inclusion of the smaller parcels would not appreciably affect the density calculations.

Predominantly residential area differs from *developed residential area* only in that it can be computed for large areas without a detailed survey covering each lot. In areas where there is spotty building and many vacant lots, the predominantly residential area may be considerably larger than the developed residential area. When the concept of predominantly residential area is used in connection with possible future development, areas not yet "predominantly residential" but ripe for building may be added. The total future predominantly residential area may be called "area appropriate for residence."

The term *net area* is the one most commonly used in computing densities for individual buildings or projects. It refers only to those parcels of ground upon which dwellings are built. If stores or other community facilities are built on the same lot with dwellings, it is necessary to exclude the area that they cover in order to maintain comparability with developments which are devoted solely to dwellings. When stores or community facilities are part of a dwelling structure, the portion of such uses not directly beneath (or above) dwelling space are excluded. Although this may seem to be an unnecessarily precise and confining requirement, application of these definitions to a number of existing projects indicates that it is a refinement of considerable importance.

Whether storage garages should be included within *net area* or not is a particularly difficult problem. Ordinary zoning procedure allows storage garages even in the most restricted districts, provided they are intended only for use of families dwelling on the same lot. In one and two-family house areas, the one or two-car garage as part of the house or on the back of the lot does not appreciably affect openness or amenities, and the definition of net area does not require their exclusion. In multi-family construction, however, the situation may be considerably different. For example, a one-story garage requires about 200 square feet of land coverage per car, while an average 4-room apartment might require about 1,000 square feet of gross floor area. If the apartment building has 5 floors, the land coverage would be 200 square feet per family, or the same as that needed to provide for the family car. With buildings of 12 or 14 stories, if each family had a car, the space taken up by garages might easily be twice that necessary for the apartment buildings themselves. Obviously, then, the developer who provides a garage for each apartment would have substantially less open space and amenity at a given density than the developer who relies on garages on adjacent lots to provide for his tenants. Thus the area covered by garages for more than two cars (except that beneath dwelling space) is excluded from *net area*. Even this requirement is not entirely equitable as the child playing in the shadow of a garage wall well knows, particularly when the garage may have several stories instead of only one.

Density measurements based on net area may be generally satisfactory when applied to normal street and lot patterns. In considering super-block development, however, where the proportion of gross area in streets is often much smaller than in the normal block pattern, gross area becomes a much better measure of general openness of design. For instance, a redevelopment project site on normal Manhattan blocks has 36 per cent of its gross dwelling area in streets. After replanning into super-blocks it may have only 15 per cent in streets, the developer thus gaining enough land to increase housing accommodations by one-third without increasing building heights, coverage or density within property lines. Light, air, and general openness are thus greatly reduced and pressure on public services in the neighborhood correspondingly increased. Thus, in establishing density regulations, it was found better to apply such regulations to gross rather than to net area.

In connection with large apartment projects, especially those with an appreciable part of their site in private streets, service drives or parking areas, a measurement of out-door living area is sometimes useful. Such projects should be encouraged, especially if they are laid out in large super-blocks, reducing the area in public streets, and providing additional automobile access and parking on private land. However, since the land area available for green space, active and passive recreation, and the like, may be considerably reduced by private streets, drives, or parking areas, a measure of the amount of open space not devoted to automobile access and storage is desirable. The term *out-door living space*, therefore, can be used to refer to all net area not covered by buildings or devoted to private streets, drives and parking areas. This measure can be useful in comparing projects on normal city lots or blocks, and on super-blocks of various types. Use of this measurement for density regulation, however, is not recommended, since it might tend to discourage desirable types of super-block design.

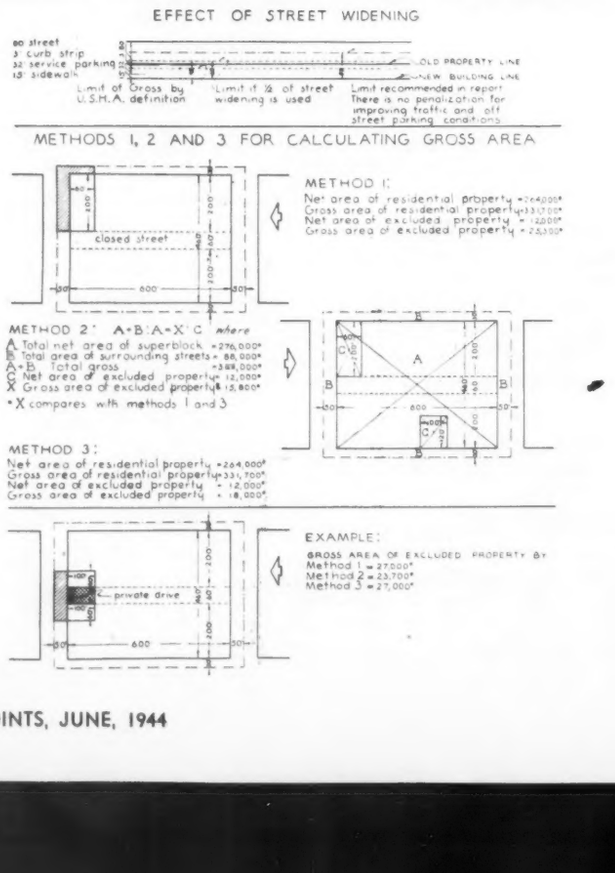
Street Measurements

In connection with the foregoing definitions of area terms, considerable difficulty arises in measuring street areas, both as to boundary streets and as to street areas serving uses which are excluded from the various types of areas. In general, it is deemed desirable to follow the usual practice of measuring boundary streets up to the center line, thus allocating all street area to the property on one side of the street or the other.

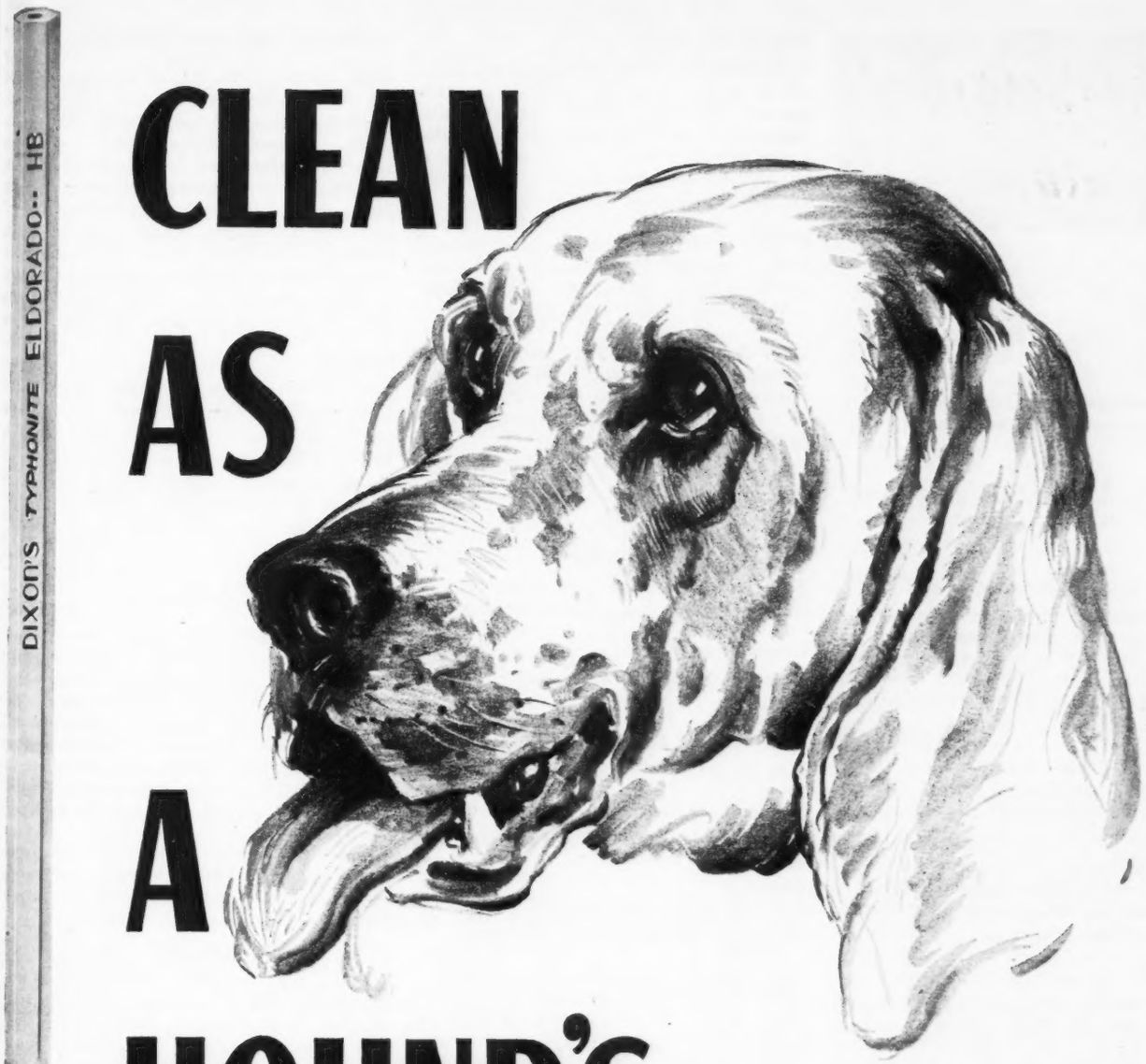
In case of exceptionally wide streets, it is contended that the portion of street area primarily serving through-traffic needs should be eliminated. For instance, the definition of gross area used by the U.S.H.A. includes street area only up to 40 feet from property line. Although an exceptionally wide street gives greater openness and more sun-

(Continued on page 99)

Methods of Street Measurement for Gross Area Calculation


EFFECT OF STREET WIDENING
80 street
3' curb strip
32' service parking
13' sidewalk
OLD PROPERTY LINE
NEW BUILDING LINE
Limit of Gross by U.S.H.A. definition
Limit if ½ of street widening is used
Limit recommended in report There is no penalization for improving traffic and off street parking conditions
METHODS 1, 2 AND 3 FOR CALCULATING GROSS AREA
closed street
600
METHOD 1:
Net area of residential property =264,000*
Gross area of residential property=331,700*
Net area of excluded property = 12,000*
Gross area of excluded property = 25,300*
METHOD 2: A+B:A=X:C where
A Total net area of superblock =276,000*
B Total area of surrounding streets = 88,000*
A+B Total gross =364,000*
C Net area of excluded properties 12,000*
X Gross area of excluded property 15,800*
*X compares with methods 1 and 3
METHOD 3:
Net area of residential property =264,000*
Gross area of residential property=331,700*
Net area of excluded property = 12,000*
Gross area of excluded property = 18,000*
private drive
EXAMPLE:
GROSS AREA OF EXCLUDED PROPERTY BY
Method 1 = 27,000*
Method 2 = 23,700*
Method 3 = 27,000*

CLEAN AS A HOUND'S TOOTH!



"I SHALL ARISE," Typhonite Eldorado Pencil reconstructions of old world architecture bombed by the enemy. Done by Samuel Chamberlain. Reproduced de luxe. You should have a copy. No charge. Write address below.

The sharp clean lead, the sharp clean drawing, the sharp clean blueprint. Eldorado pencils make Eldorado drawings for Eldorado blueprints. That's the formula that sings the praise of Dixon's Typhonite Eldorado pencils.

TYPHONITE ELDORADO

PENCIL SALES DEPT. 167-JG, JOSEPH DIXON CRUCIBLE CO., JERSEY CITY 3, N. J.

Manufacturers' Literature

Air Devices

1-02. *Agitair Products*, 12 pages, Air Devices, Inc.

1-03. *Package Units and Blowers*, 4 pages, Peerless Electric Company.

Aluminum

1-04. *Aluminum Imagineering Notebook*, The Aluminum Company of America.

Bathroom Accessories and Equipment

2-01. *Bathroom Medicine Cabinets*, 12 pages, Owens-Illinois Glass Company.

2-02. *Why Take A Shower Bath*, 16 pages, Fiat Metal Manufacturing Company.

Blueprint Machines

2-03. *The Technique and Uses of "Office-Copying,"* Campbell & Company.

Color Signals

3-02. *A Safety Color Code for Industry*, 15 pages, Du Pont de Nemours & Company, Inc.

Concrete

3-03. *Form-Ty Engineering*, 32 pages, Richmond Screw Anchor Company, Inc.

Construction

3-05. *Q-Data No. 1*, H. H. Robertson Company.

Contracts

3-06. *How One Company Organized to Handle War Contract Terminations* is an 11-page booklet put out by Lyon Metal Products, Inc., as a manual for those who are "only starting their termination headaches." It is not claimed that the plan will fit every concern but is mainly a plan of organization to expedite a fact-gathering job by the personnel in the best position to expedite the facts.

Doors

4-01. *Do Away With Deadend Cellars This Modern Way*, The Bilco Company.

4-02. A new 40-page *Kinnear Rolling Door Catalog* (A.I.A. File No. 16-D-13, Bulletin No. 39) covers all types of upward-opening door equipment manufactured by the Kinnear Manufacturing Company—steel rolling service doors, fire doors, window shutters, sectional overhead doors, bifolding doors, rolling metal grille, and special type doors, plus information on construction, specifications, installation, operation.

Drawing Instruments

4-03. Charles Bruning Company, Inc., offers three drawing sets of nickel-plated polished brass instruments claimed to embody features of high-grade precision instruments, which may be purchased separately. Literature available.

Electrical Equipment

5-03. *Care and Maintenance of Electrical Equipment*, 28 pages, The Square D Company.

5-04. *Electrical Living in 194X*, 64 pages, Westinghouse Electric and Manufacturing Company.

Engine Controls

5-05. *Automatically Controlled Gas, Gasoline, and Diesel Engines*, Synchro-Start Products, Inc.

Fireplaces and Accessories

6-01. *Bennett Fireplace Supplies*, 27 pages, Bennett Fireplace Company.

Fireproofing

6-02. Brochure, Albi Firepel Corporation.

Floor and Wall Coverings

6-04. Tile-Tex Company.

Furnace Equipment

6-05. Iron Fireman Manufacturing Co.

Glass

7-01. *Specify Mississippi Glass*, 15 pages, Mississippi Glass Company.

7-03. *Daylight in Schoolrooms*, an 11-page illustrated booklet on the use of glass block in new buildings and in modernizing old buildings, and *Glass Block in Hospitals*, a 7-page booklet, are offered by the Owens-Illinois Glass Company. Several types of prismatic block, including light-directing block, no-glare block, and block for use on northern exposures are described; also, technical data on insulating value, maintenance, strength, and sound transmission is given.

7-02. *Design of the Month*, Pittsburgh Plate Glass Company.

Hardware

8-01. *Hardware Data Sheets*, 12, Lockwood Hardware Manufacturing Company.

Heating

8-02. *46S-6, Carrier 46S Unit Heaters Insure Wide Heating Coverage and Flexibility (2 pages); 46E-22, Carrier Type 46E Unit Heater with Propeller Fan for Horizontal Discharge (2 pages); 46PQR-17, Carrier Blower-Type Heat Diffusers (4 pages); Carrier Corporation.*

8-03. *Duragauge*, 12 pages, Manning, Maxwell & Moore, Inc.

8-04. *Heating and Conditioning the Post-war Homes*, 12 pages, Minneapolis-Honeywell Regulator Company.

8-05. *Catalog No. 44*, a 16-page booklet on heating, cooling, and air conditioning equipment, sets forth illustrations and specifications of products now being manufactured (available to dealers, subject to current government regulations) by Viking Manufacturing Corporation. Included in the catalog are conversion burners; space and oil-fired water heaters; boilers; coal-fired, floor, oil-fired, gas-fired furnaces; room coolers; all-year air conditioning, etc.

Insulation

9-01. *Performance*, 2 pages, National Mineral Wool Association.

Kitchen Cabinetry

11-01. *Kitchen Maid War and Postwar Cabinetry*, 8 pages, The Kitchen Maid Corporation.

Lighting

12-01. Curtis Lighting, Inc.

12-06. An illustrated folder from General Electric Company's Lamp Department, *Looking Ahead at Lighting*, presents details of their architectural design program to promote better postwar lighting, and states booklets giving further plan details, architects' comments, and full-color perspective view will be available from month to month.

12-03. *Facts About Colovolt, The New Cold Cathode Low Voltage Lamp*, 6 pages, General Luminescent Corporation.

12-02. The Holophane Company, Inc. (illumination service), has published an article, "Light for Safety," in its March number of *Architexts*, giving statistics and constructive data on accident prevention through safe illumination.

Lumber

12-05. *Lumber Industry Facts (1943 Edition)*, National Lumber Manufacturers' Association.

Maintenance

13-02. *Maintaining Your Buildings Today*, L. Sonneborn Sons, Inc.

Paint

16-01. *National Paint Dictionary*, Stewart Research Laboratory.

Plastics

16-05. Plastics Division of Carbide and Carbon Chemicals Corporation issue an illustrated (4"x9") folder, *The Story of Vinylite Plastics* in conjunction with a bulletin on "Vinylite" resins. Among many uses described for "Vinylite" plastics are light diffusion panels, safety glass, cable and wire insulation, chemical tubing, coatings for concrete and cement, adhesives for glass brick, adhesives for bonding fabrics to metal, adhesives for metal plate lamination, and weather-proof paulins.

16-02. *All Types of Plastics*, 24 pages, The Richardson Company.

Plywood

16-06. Aetna Plywood and Veneer Company announce publication of their de luxe, color printed and illustrated *Victory Book*, which is comprised of three sections: "Plywood In and AFTER VICTORY"; "The True Function of the Plywood Distributor"; "The Manufacture of Plywood"; plus a new copyrighted feature on current data about plywood and veneer availability.

Plumbing Fixtures

16-03. *Douglas Folders*, 8 pages, The John Douglas Company.

16-04. *Women Tell Us*, Eljer Company.

School Equipment

19-05. The Horn Manufacturing Company offers a new 48-page *Book of Postwar Planning for Schools* containing complete floor plans used in 40 old and new outstanding schools, showing folding partitions and bleachers used for layout flexibility.

Standards

19-01. *600 Standards, American Standard Basis for the Coordination of Masonary (A62.2), and Coordination of Dimensions of Building Materials and Equipment (A62.1)*, The American Standards Association.

Steel

19-06. An 18-page booklet, *Industrial Steel Buildings*, is offered for A.I.A. File No. 14i by the American Rolling Mill Company, describing and illustrating advantages of "Steelox" construction. "Steelox" sections are said to be designed on sound engineering principles, consist of modified channels fabricated from galvanized steel sheets strengthened by a patented method of flanging that provides a rigidly-durable beam formation integral within each unit. The flanges are said to be shaped to interlock firmly without need of rivets, welds, nails, or bolts through the metal, meaning quick assembly and tight-fitting dustproof and weatherproof joint. The section's design is described as suitable for sidewalls, load-bearing partitions, roofs, and floors; its construction is claimed to be easily grounded so that it is safe from lightning, easy to insulate and soundproof; skilled labor for construction is not required.

19-10. Movable steel partitions, flush type, 4" thick double-faced, with single-line joint from floor to ceiling, are manufactured by Martin-Parry Corporation. They are said to eliminate use of filler boards of other materials at ends or above cornice height, making new effects possible; walls are made solid, yet partitions can be easily moved and relocated; they consist of two surfaces of "Metlwal" paneling (asbestos-lined steel sheets with corrugated steel backing) attached to steel studs in between. Standard panel sections may be used as air-conditioning ducts; their sound-proof characteristics claim to equal 4" hollow tile plastered on both sides. Descriptions and data are given in a 24-page illustrated booklet, *M-P Movable Steel Partitions and Metlwal Paneling (A.I.A. File No. 14M and No. 19F)*.

19-07. *How Zinc Saves Steel from Rusting* is a 26-page illustrated booklet (6"x9") published by The New Jersey Zinc Company for the purposes of summarizing metal protective paint developments and to be of help in evaluating postwar paint coatings.

19-04. *85 Ways to Make a Better Home*, U. S. Steel Corporation.

19-08. A 42-page illustrated *Manual of Recommended Practice for Saxe Welded Erection System* is published by J. H. Williams & Company and carries complete instructions on Saxe welded connections used in structural steel construction. It carries tables and drawings on Standard Direct Web Welded Connections, Direct Web Welded Connections for Miscell. Lightweight Beams and Joists, Standard Welded Web Angle Beam Connections; also listed are welded steel specifications covering all materials, fabrication, erection, and inspection of welded, structural steel work for buildings, tanks, bridges as may be called for by plans; a data outline for cause-and-cure "trouble shooting."

Storefronts

19-02. *Reports on Two Architectural Competitions*, The Kawneer Company.

Swimming Pools

19-09. A two-page pamphlet addressed to "those interested in better swimming pools" describes 3 swimming pool protectives put out by Inertol Company, Inc., manufacturers of waterproofing and protective compounds.

19-03. *Swimming Pool Data and Reference Annual.*

Testing Facilities

20-01. *Directory, American Council of Commercial Laboratories.*

Toilet Compartments

20-02. *Toilet Room Environments*, 12 pages, Catalog No. 82, Sanymetal Products Company, Inc.

Trucks

20-03. *Colson Quiet Trucks for General Purposes*, The Colson Corporation.

Valves

22-01. *Malleable Iron Valves*, 6 pages, Jenkins Brothers.

Ventilation

22-02. Allen Corporation.

Water Coolers

23-02. Two new electric water coolers are announced by Ebco Manufacturing Company, in *Folder 185*—Model VLP-10B pressure bubbler model for industrial and commercial use, 10 gallons per hour capacity; and Model RC-20, glass filler model designed for cafeterias, restaurants, and mess halls, capacity more than 40 gallons of 50° F. drinking water over a two-hour period when operating in a 100° F. ambient room temperature.

Welding

23-03. Air Reduction Sales Company announces publication of a 20-page Revised Price List, *Gas and Electric Welding Supplies and Accessories*, superseding other lists. Contents also include detailed information on sizes, dimensions, weights, stock numbers, forwarding data, and recommended uses.

Windows

23-01. *Condensation on Glass in Windows*, 4 pages, and *Hope's Quick-Set Storm Sash*, Hope's Windows, Inc.

X-Ray Industrial Unit

24-01. A self-contained industrial X-ray unit, "Norelco Searchray 150," is described in a 4-page illustrated folder from North American Philips Company, Inc. The unit is used as a means for non-destructive examination of specimens of aluminum, steel, copper, hard rubber parts, plastics, etc., for internal flaws, cracks, or foreign matter.

Literature and Samples Wanted

WILBUR HENRY ADAMS, Designer, Rural Workshops, R.F.D. #1, Wolf Road, Erie, Pa. (Data, samples, and catalogs, especially items on plywoods and plastics.)

A. F. STEELE, Architect, Public Works Dept., Naval Air Station, Norfolk, Va. (Data and catalogs for complete A.I.A. file.)

Pencil Points, 330 West 42nd St., New York 18, N. Y.

I should like a copy of each piece of Manufacturers' Literature listed

NO.	NO.	NO.	NO.
NO.	NO.	NO.	NO.
NO.	NO.	NO.	NO.
NO.	NO.	NO.	NO.

NAME POSITION

FIRM

MAILING ADDRESS ☐ HOME ☐ BUSINESS

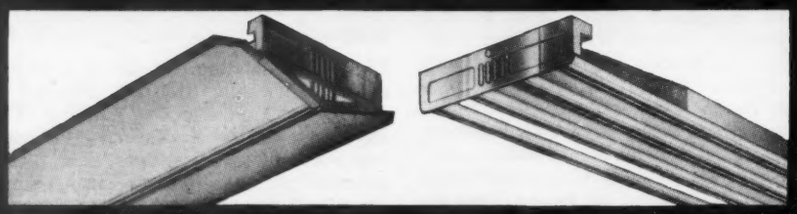
CITY STATE

6/44

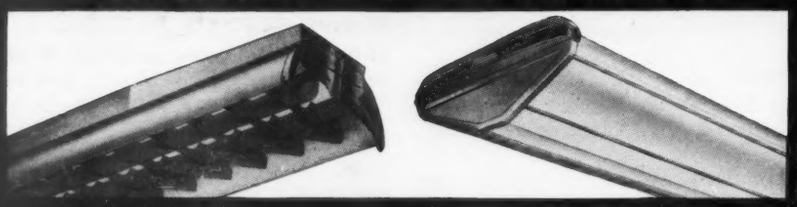
PLEASE PRINT

In a nut-shell...

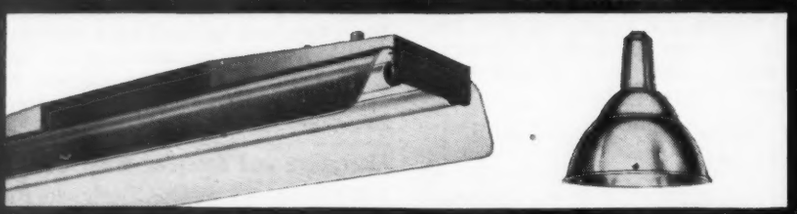
There's a **Guth** **FLUORESCENT FIXTURE** *for Every Modern Lighting Need!*



GUTH ARISTOLITE — GUTH LIGHTRONICS



GUTH FUTURLITER — GUTH EXCELUX



GUTH SUPER-ILLUMINATOR — GUTH ALUMINUM HIGH BAYS

GUTH Fluorescent Lighting is available in types for every requirement. Smartly styled — modern — efficient — dependable! That summarizes today's GUTH Fluorescent — the engineering achievement based on over 40 years of lighting leadership!

ULTRA-VIOLET for Schools and Hospitals

GUTH Germicidal Lamp Units — the new, *proven* way to destroy air-carried bacteria — help control contagion. Complete engineering and layout data now available. Use coupon below.

The Edwin F. Guth Co. • 2615 Washington Ave. • St. Louis 3, Mo. **Guth**

EDWIN F. GUTH CO.
2615 Washington Ave.
St. Louis 3, Mo.

Please send me, at once, detailed information on the subject checked below:

☐ Fluorescent Lighting ☐ Ultra-Violet Units

Name..... Firm.....

Address..... City.....

Views

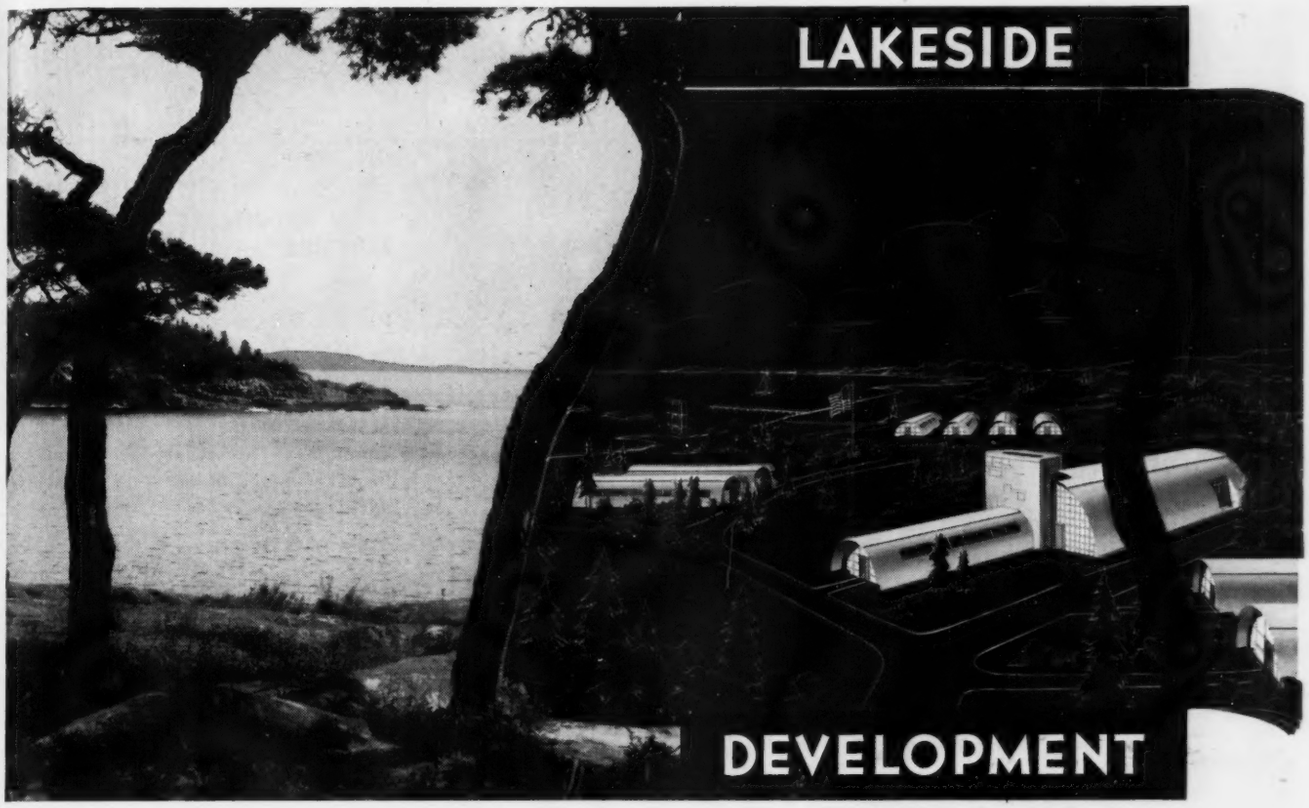
(Continued from page 10)

the country had interpreted his problem in terms of his own experiences of terrain, population, and social development. Thus the jury was confronted with many problems rather than a dozen slight variations of a single theme. Hence it was impossible for the jury to preconceive several "proper partis" and try to put the drawings into grooves. In the past, many excellent solutions did not receive awards either because they were too advanced for the juries or because they could not be easily catalogued into a preconceived parti. The Free Problem is a stimulating challenge to the student to try original work rather than to play the jury for an award. In the attitude of the first jury at work on the Free Problems I saw a willingness to study each solution on its own merit and to reward individual work. This is indeed a step forward in architectural education.

Almost without exception the schools that have withdrawn from Beaux Arts competitions have continued with local competitive work and often have even promoted joint competitions with nearby schools. Many of the smaller schools continue to work on the Beaux Arts programs without submitting their solutions to the New York juries. With the introduction of the Free Problem and the appearance of younger and more progressive blood on the juries we shall undoubtedly witness a growth in Beaux Arts competitions.

The name "Beaux Arts" has been responsible for much of the misunderstanding of the work of the Institute. An effort some four years ago to change the name to the American Institute of Design proved abortive. The necessary three-fourths majority vote could not be polled, perhaps because of the sentimental recollections of many older men who had attended the Ecole des Beaux Arts in Paris. Current war psychology might, however, make the change possible today. Recently the St. Louis chapter of the American Institute of Architects discussed the question, "Shall the B.A.I.D. take a new lease on life by adopting a new cognomen and emerge as a nationally sponsored academy of design with headquarters in Washington?" It is true that Washington is the political center of the nation, but it is hardly the cultural center. An organization devoted to the encouragement of American art and architecture might well locate its headquarters elsewhere than among the classical columns of Washington. However, the vitalizing of the Beaux Arts idea might well start by the dropping of the French name.

(Continued on page 94)



The range of usefulness of Stran-Steel framing systems by no means ends with industrial and municipal buildings, multiple dwellings, group housing projects and other large units . . . but extends into the field of smaller structures—cottages, boat houses, cabins, summer houses and the like.

This light-gauge steel has certain characteristics which serve equally well in all types of construction. It forms a rigid framework which will not sag—resists termites and dry-rot—and is light-weight enough to handle easily in transporting and erecting. A special patented nailing groove for applying collateral materials, plus other unique advantages, makes possible economies of time, labor and materials. As a structural medium, it is flexible and adaptable—affording the architect wide latitude in design.

Current production of large and small military buildings combines with this company's broad peacetime activities to provide a fund of specialized experience on which the construction industry may draw in developing its postwar plans.

Manufacturer of the U. S. Navy's Famous Quonset Hut

STRAN-STEEL

DIVISION OF GREAT LAKES STEEL CORPORATION, 1130 PENOBSCOT BUILDING, DETROIT 26, MICH.

UNIT OF NATIONAL STEEL CORPORATION

kept FORM costs down!

RICHMOND 10-WAY SAVING PLAN

1—Provides all kinds of form-tying devices to choose from.
2—Economizes because Form Ties cost less to use than wire, band or rod ties.
3—Supplies Form Ties engineered for safe working loads of 1,500-30,000 lbs.
4—Assures faster erecting and stripping plus big lumber savings.
5—Promotes perfect alignment for correct wall thickness.
6—Protects job against rust staining with "1 to 3 inch cutback".
7—Saves shipping and handling costs because of scientifically reduced weight.
8—Is only known prevention against termite destruction.
9—Enables you to borrow working parts and to pay only for ties in the job.
10—Is planned from job plans to use the right size of ties and the least number of ties to fit forming for fast, safe work.

Whether you are planning, designing or estimating on a concrete job—large or small—there are *Dollars* to be saved on *Form Work* by planning.

Richmond Services to Architects, Engineers and Contractors include recommendations on Form Tying Devices, Consultation on Form problems and Forming used, as well as Estimates on requirements, all without obligation.

The list of big jobs on which Richmond Form Ties have saved on form-work costs and speeded up completion is a blue-ribbon list of modern construction. It includes mammoth projects everywhere—and small contracts, too. There is a Richmond Tie engineered for every type of concrete construction. We plan a Tie to fit the work.

For information, write to our Planning Division.

SEE OUR CATALOG IN SWEET'S

RICHMOND SCREW ANCHOR COMPANY, INC.
816 LIBERTY AVENUE • BROOKLYN, NEW YORK
Established 1911

Views

(Continued from page 92)

FROM ARCHITECTS IN THE SERVICES

Last December the editorial page of PENCIL POINTS *carried a standing invitation, to architectural men in the services, to express themselves upon the future of architecture. Some time later, the Editor sent letters with a similar message to these men. Some responses were published in the May issue. Herewith are others:*

Reply from the Army

Dear Editor:

Some time ago my mother forwarded your letter of Jan. 18th written to the architectural men in uniform. Our constant activities and movements have kept me occupied, but now that we are settled for a while, I have more time to devote to correspondence.

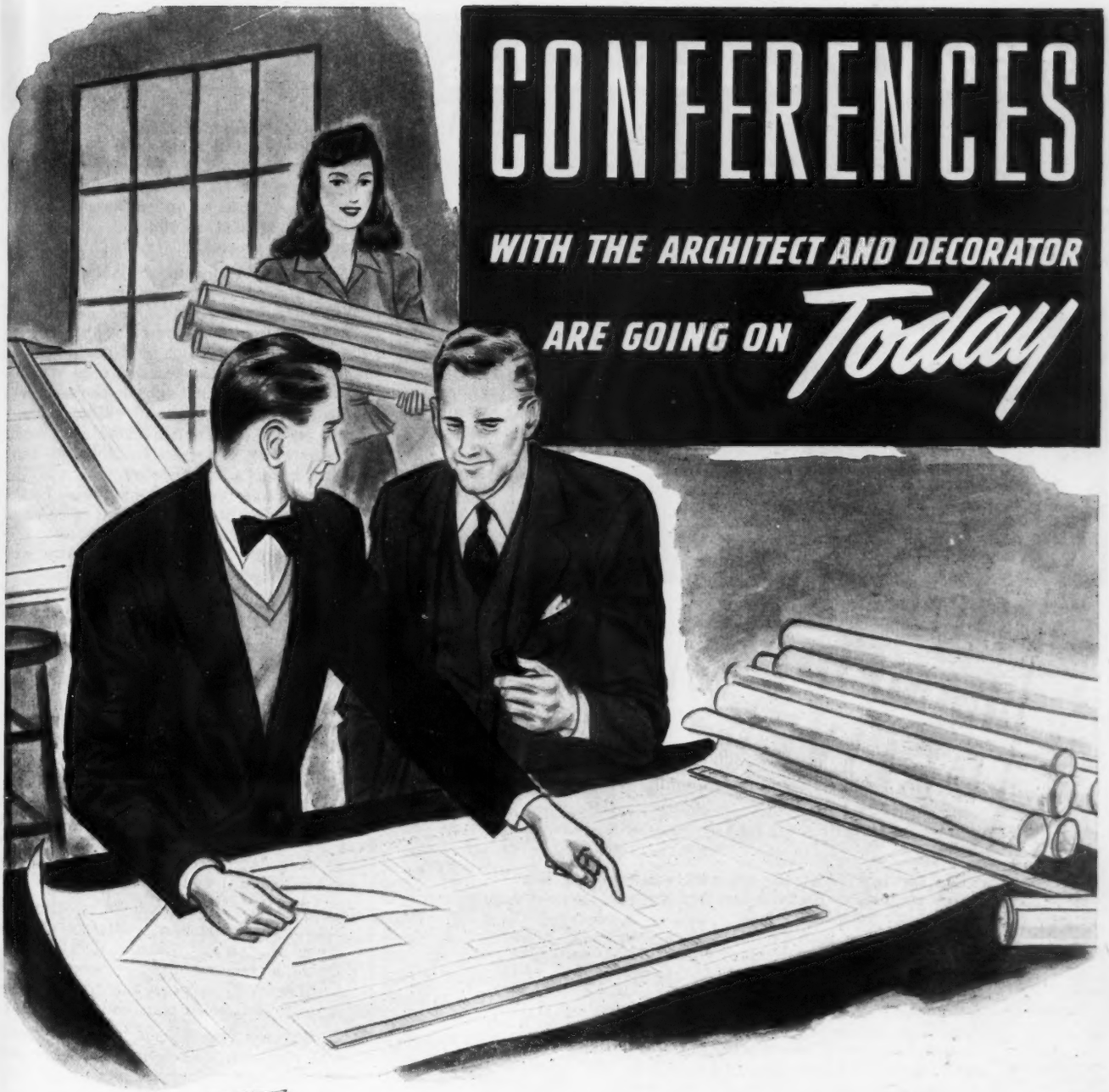
First I'll give you a little sketch of my background, leading up to and through my college course, which was cut short by the present war.

From the time that I took my first architectural and mechanical drawing in the Junior High, I knew that I wanted to be one of the builders of this nation, Under the guidance of Mr. R. B. Patin, principal of Shaker High School which is noted throughout the country for its record of college students, I prepared for college entrance.

I then attended Western Reserve University where I studied at the School of Architecture where Francis R. Bacon is Dean. I completed a year and a half and by that time the draft board had called me. I finished mid-term exams on Tuesday, during the week I was to have a furlough, and went to the Army on Thursday. It was a great disappointment to leave my architectural course incomplete but I hope that I will not be away too long to continue in the work in which I take such great interest. I am determined to return as soon as the war is over to complete my course and benefit from the scholarship that I now hold. Let me say here that all of the 55 boys who were studying at the School of Architecture are now serving their country throughout the world.

I had the usual basic training at St. Petersburg, Fla., where I was assigned to the Army Air Force and photographic work. From there I went to Lowry Field in Denver, where I attended what I think was the best and most modern course in photography. The school is in itself an ideal place to work. After completing four weeks of basic photo work, I was put in the Tri-Metrogon Mapping section at my request. There I spent eight weeks

(Continued on page 98)



CONFERENCES

WITH THE ARCHITECT AND DECORATOR ARE GOING ON *Today*

ARMY (E) NAVY

FORMICA

In order that our boys returning from the wars shall have employment waiting for them it is necessary that a great deal of planning be done in advance. And it is being done—in many cases with architects and decorators who will produce the first postwar stores, hotels, restaurants, theatres, stations and similar public buildings.

Before the war Formica architectural sheet had a large part in beautifying and making more durable the equipment and structural surfaces of these establishments. During the war new colors, new products and ideas have been developed which will make the material even more useful in years to come.

Be sure, when your plans are formulated that you are not overlooking possible uses for this modern plastic material. Be sure your plans for expansion and modernization are really up to date.

Data on the uses and methods of applying Formica are available for inclusion in your specifications. Write for it.

"The Formica Story" is a moving picture in color showing the qualities of Formica, how it is made and how it is used. Available for meetings of designers and business groups.

THE FORMICA INSULATION CO.
4621 SPRING GROVE AVE. CINCINNATI 32, O.

THREE CHOICES
IMMEDIATE
DELIVERY

Made for service at the moment when saving time is the important factor. Another way to save time is to phone your order!

No. 1452D: Ten inch Celluloid Face bevel edge slide rule. Inches and metric rules on bevel edges. Scales A, B, C1, C, D, and K on slide front. Scales S, L and T on reverse side. List Price $3.50

No. 1444D: Five inch Celluloid Face POCKET style slide rule. Scales A, B, C1, C, D and K on slide front. Scales S, L, and T on reverse side. List price $2.25

No. 1446D: Ten inch Printed Surface slide rule. Inches and metric rules on vertical sides. Scales A, B, C1, C, D, and K on slide front. Scales S, L, and T on reverse side. List Price $1.50

Main Office:
THE FREDERICK POST COMPANY • CHICAGO

KANSAS CITY

POST

WESTERN

BLUE PRINT COMPANY

909 GRAND AVE. **VICTOR 7881**

Views

(Continued from page 94)

learning the fundamentals and all the various processes, and completed a map at the end of that time.

From there I went to Peterson Army Air Base at Colorado Springs and was assigned, after overseas training, to the 26th Photo Reconnaissance Squadron. I have always enjoyed PENCIL POINTS and thought it contained many things that other magazines did not. When I was home on furlough in September I spent some of my time looking through the issues that had accumulated while I was away. I expect some day to have them bound for reference, which is why I don't have them sent overseas. I have often wished that there were some small magazine—a condensation of up-to-the-minute architectural and building articles and news that could be sent to men overseas in order that we could still keep in contact with progress in the field.

Since my arrival in New Guinea, the small units have been combined into one large compilation group, and I have been put on detached service to the Engineers. We have a large building where we do most of the mapping and reproduction work for this theater. It is interesting because we know what will happen before it actually does. As I write this the planes are zooming by at tree top level—off on their daily mission to hit the Japs.

I was able to spend some time in Sydney and Brisbane—always viewing everything from the architect's angle. There is evidence of improvement but nothing will surpass the great buildings and homes of the good old U. S. A.

During my free time I have done some water color and sketching—an endeavor to make this experience benefit my later work.

As for my outlook to the future and my return home, I hope for more equality among men—that can be applied to building and the profession too. A life not so complex, and homes that are suitable to our needs, chances for greater travel, and enjoyment—away from a daily "grind" so to speak. It can be that way too! I see a country developed through science, engineering, and research where the four freedoms will prevail. Immediately upon returning there will be a few years of transition when the factories and men are redesigned for home functions. During that time I'll be studying, and when we, after that period, begin to make our country a better place in which to live, I will be ready to do my part to make it so.

Many thanks for your letter and interest in the men in the service. May we all be home to do the job soon.

CPL. CLYDE A. PATTERSON, JR., (USA)

(Continued on page 104)

MEASURING DENSITIES

(Continued from page 88)

light and daylight, particularly with high buildings, it was found by experimentation that ordinary lots on streets over 100 feet wide would have excessively high net densities, in proportion to lots on normal width streets, when the gross area is measured to the center line. (See Chart 5.) Thus on streets over 100 feet wide, the gross area should not include any area beyond 50 feet from the property line. This requirement also simplifies measurements where street areas are of irregular shape.

In the case of a developer who is prepared to donate land for widening boundary streets, however, this requirement would reduce the gross area when the new street width is to be more than 100 feet. The widening of boundary streets should not thus be discouraged, since it often provides for more adequate through-traffic facilities. Therefore, in such cases, the center line of the bounding street or the 50 foot maximum distance should be based on the original street lines before widening.

If an area adjoins a large park, cemetery, body of water, spacious institutional grounds, or other large permanent open space, with no street intervening, some allowance should be made for the added openness of environment thus provided. As in the case of wide streets, it is recommended that the area of such open space may be included in gross area up to a distance of 50 feet from the property line.

A further difficulty in street measurement arises in excluding street area serving excluded uses. The most obvious method would be to measure the street area in front of the excluded use up to the center line of the street. In the case of corner lots, the street area would be measured up to the center line on both frontages and would also include that part of the street intersection falling within center lines. Thus, this method might result in a high proportion of street area assigned to excluded uses if these are located on corner lots or wide streets.

Another method of measurement, which is useful because it can be applied without a separate measurement of street areas in front of excluded uses, is based on the assumption that the percentage of total area in streets is also the same as the percentage of area to be assigned to both the excluded and included uses. Stated as a formula, this relationship could be expressed by the proportion (see Chart 1):

$$\frac{\text{Total Gross Area}}{\text{Total Net Area}} = \frac{\text{Gross Area of Excluded Use}}{\text{Net Area of Excluded Use}}$$

This method assigns more equitably the high proportion of streets at or near intersections to all property using the street for access. Furthermore it can be readily computed for large areas without undue additional measurement of maps because the "x" in the equation is usually "Gross Area of Excluded Use."

Objection has been raised to this method, however, when applied to super-block developments where the proportion of gross area in streets has been materially reduced by providing access to dwellings not by streets of normal width, but by service drives or merely by walks. If commercial or industrial buildings occur in such blocks, they often require a higher proportion of street area to service them than that which would be necessary for residence or recreation uses alone. Therefore a third method has been proposed which would exclude street area amounting to one-half the total area of excluded commercial or industrial uses. This ratio is based on the fact that in normal block development for New York City, 30 to 35 per cent of the gross area is in streets. Similarly, in 16 cities included in the study of "Urban Land Uses" by Harland Bartholomew, an average of 33.6 per cent of the developed area of the cities is occupied by streets. Thus it is assumed that the area in streets normally necessary to service commercial and industrial uses is at least one-third of their gross area, or one-half the area in private lots. For developments that have less than one-third of their area in streets, therefore, it is assumed that the lower percentage in streets is attributable to better planning of street area in relation to residential and recreation areas. Consequently commercial and industrial uses should have a "normal" area of street equal to one-half their area assigned to them, the remainder being assigned to the other uses.

This subject of measuring street areas should have further study. For purposes of general measurements, either the second or third methods above would be as suitable as the first and much more convenient to use when large areas are involved with many excluded uses or when reasonably accurate maps are not available. For purposes of density regulation, however, the first method should always be used, except possibly for certain types of large-scale projects with excluded uses. In such cases the second or third methods might be used but applied only to a tract of land in a single ownership.

Measurements of Population and Bulk

In addition to misunderstandings in regard to definitions of area terms, the measurement of density involves difficulties in selection and use of the other component of the calculation, which is usually stated in terms of *persons* or *families*. Although not always recognized as a type of density measurement, bulk of building in relation to land area is closely related to—and for certain purposes is more important than—*population* density in the strict sense of the word. Bulk of building may be measured in terms of height and coverage, or 12 stories high at 15 per cent net coverage.

If *families* or *persons* is used, distinction must be made between conditions that may exist at a given date and the capacity of the buildings in families, or in persons at a given standard of occupancy. Most types of building bulk measurement are more appropriate in determining adequacy of light and air, but less useful when considering adequacy of open space or need for "population facilities" such as schools, stores, playgrounds and transit. Some of the more important advantages and disadvantages of these alternative methods of measurement are outlined below:

Population Measures

TERM	ADVANTAGES	DISADVANTAGES
PERSONS	*Appropriate for measuring population distribution and densities over large areas relying on census data or special surveys. For smaller areas, measures actual occupancy.*	*Changes from time to time without alteration of buildings, and without change in the number of occupied dwelling units, particularly in new communities with a high proportion of young, growing families. Cannot be applied to buildings in the planning or construction stage except by relation to a standard of occupancy, in which case it becomes "persons capacity" (see below).*
PERSONS CAPACITY	*Can be applied to buildings in the planning and construction stage as well as to built-up or partly built-up areas at assumed standards of occupancy. Very useful in planning "population facilities" such as schools, stores, parks and playgrounds. Generally changes only with construction, alteration or removal of residential structures.*	*Methods of estimation and standards of occupancy vary considerably with the income level, type of family, etc. Estimates may be based on number of persons for each size of dwelling unit, for each bedroom, or average persons per room. These measurements should be in terms of person per construction room as some types of room counts include dinettes or bath rooms as half rooms.*
PERSONS PER ROOM	*Useful in determining the degree of crowding in living quarters. Usually computed by dividing the number of persons by the number of rooms. Variations of this method include omitting rooms not usable for sleeping, counting young children as half persons and omitting infants.*	*Does not measure crowding on the land. Complicated by differences in methods of counting rooms and persons.*
FAMILIES	*Appropriate for measuring the actual number of families housed, but should be considered in relation to the proportion of family quarters vacant. Generally used for small areas.*	*Family size may vary substantially. Number of families changes from time to time with the vacancy ratio. It is not always clear that "families" is equivalent to "households" or occupied dwelling units, nor whether single person families are included.*
FAMILY CAPACITY OR DWELLING UNITS	*Little chance for ambiguity, since family quarters are generally well defined by the provision of kitchen equipment. A structural change is generally required for increase or decrease. Can be accurately*	*Number of persons occupying the family unit may vary from one to many and the "average family size" may not be applicable to any given area. If used for regulation, may hamper provision of small dwell-*

(Continued on page 100)

MEASURING DENSITIES

TERM	ADVANTAGES	DISADVANTAGES
	applied to buildings in the planning stage or to single and two family areas which have been subdivided, but not completely built-up.	*ing units or may prevent desirable conversion of large into small dwelling units.*
Bulk Measures		
COVERAGE AND HEIGHT	*Easily computed for single buildings, projects or small areas. Readily understood.*	*Does not allow for setbacks and variations in height of different parts of a building or project. Reasonable restrictions for light and air may still permit very high population if rooms are small, thus overloading "population" facilities.*
FLOOR AREA RATIO	*Relatively easily computed for single buildings, projects or small areas by dividing gross residential floor space of all stories by land area. Allows for flexibility of design. Can be applied to non-residential space.*	*Does not allow for differences in room and apartment sizes. If used for regulation, it may tend to result in minimum room sizes in new projects.*
CUBAGE	*An important element in regulating adequacy of light, air and openness. Allows for flexibility of design. Can be applied to non-residential space or structures more accurately than floor area ratio method.*	*Does not allow for differences in room and apartment sizes. If used for regulation tends to result in minimum room sizes and low ceiling heights in new projects. Difficult to compute for existing structures. Difficult to formulate satisfactory rules for computing cubage. Cubage computations for above ground level bulk would be different from cubage computation for cost estimates which include basement space.*
ROOMS	*Easily applied to built-up areas and proposed projects. Directly related to persons capacity measured in average persons per room.*	*Can vary if dinettes or bath rooms are counted as half rooms. Relation to building bulk may vary substantially with room sizes and amount of space in halls, dinettes, closets, etc.*

The above review of some of the advantages and disadvantages of various methods of population and bulk measurement indicates that no single method of computation will give entirely satisfactory results for all purposes. Selection of a relatively small number of the more useful measurements is, therefore, necessary. Often the measurements selected will depend on available data more than the most accurate method for the purpose in mind.

Selected Terms for Density Measurement

In order to simplify as much as possible the discussion of density in this report, only a very few of the many possible density terms will be used. These will not include terms such as might be useful for general city planning purposes, but will be confined to those necessary for the purposes of this report. Although other terms are used in this report on account of the type of data available or in order to translate figures into other commonly used terms, the following terms are considered most suitable for purposes of measuring existing densities:

Floor area ratio (net). As defined by the City Planning Commission,* "Floor area is the total area in square feet of all floors used for residential purposes including public halls, stairwells and elevators serving dwelling units. It does not include the floor areas of basements not used for dwelling purposes, community rooms, project offices or other non-residential space." The designation (net) after floor area ratio indicates that it is the ratio of floor area to net area as defined in this report. It is thus differentiated from floor area ratio (gross) given below. Floor area ratio (net) is a very convenient measure to use since for buildings without stores or other non-residential space except in basements it can be quickly computed, providing there are no setbacks, by multiplying the height in stories by the percentage of net coverage. For example, an apartment building with a floor area ratio (net) of 1.8 could be 3 stories high at 60 per cent net coverage, 6 stories high at 30 per cent net coverage or 12 stories high at 15 per cent net coverage.

Persons per net acre. This is one of the most commonly used density measurements. It is very useful in measuring the density of population at a given date in an existing project or in an area already built up. It can be applied to projects in the planning stage only by assuming certain fixed relationships of persons to other given data such as number of rooms, number of dwelling units, or floor area.

Developed residential acres per 1,000 persons. This term is stated as "acres per 1,000 persons," instead of the more usual "persons per acre," in order to facilitate breaking it down into its component parts such as playground and park acres per 1,000 persons, business acres per 1,000 persons, net acres (of dwelling lots) per 1,000 persons, etc. This method of stating this term also helps prevent confusion with persons per net acre, which is the reciprocal of net acres per 1,000 persons multiplied by 1,000.

In addition to the above terms, the following three terms are recommended for purposes of regulation of densities. Although the reasons for selecting these terms are given in more detail in Part VI, they are briefly explained below in order to show their relationship to the three terms given above.

Floor area ratio (gross). In order to relate bulk of buildings not only to the size of lot but also to the width of adjacent streets, this ratio is computed by dividing the total floor area by "gross area" (net area plus one-half of adjacent streets). Although difficulties will undoubtedly be encountered in the measurements of street areas as indicated above, this measure is recommended because it regulates bulk directly in relation to surrounding open space, whether privately or publicly owned. It is particularly useful in assuring adequate light and air, although additional requirements for yards, courts, height, etc., would also be necessary.

Rooms per gross acre. In addition to a bulk regulation, more direct control of population density is desirable, not only to control more closely the outdoor living space on the lot for each person housed, but also so that the sidewalks, streets, utilities, transit facilities, schools, playgrounds and parks in the neighborhood shall not become excessively overloaded. As shown in Tables 1 to 3 below, occupancy rarely exceeds one person per room over any large areas in New York City.

Acres of playground and park per 1,000 persons within one-quarter mile. It is suggested that an attempt be made to apply some measure such as this to large scale projects and their surrounding neighborhood up to one quarter of a mile. The required acreages, if not already available in the neighborhood, could be provided at public or private expense either within or outside the project but within one-quarter mile walking distance. Few children will use a playground that is more than that distance away. The application of this provision to projects less than one block in size is doubtful.

Rooms as a Measure of Density

Because number of rooms has not been previously suggested as a measure for regulating density in multi-family areas, the following paragraphs bring out some of the characteristics of this method:

1. There is very little ambiguity in what is often termed a *construction room.* This may be defined as an enclosed space for private occupancy designed to be used for living, sleeping, eating or cooking, excluding bath rooms, toilet compartments, strip kitchens located in closet space, halls, foyers, closets, storage and similar space. No "half-rooms" are counted.

2. *Number of rooms* bears a direct relationship to persons capacity measured in terms of average persons per room and is very useful in establishing the relationship between dwellings and the neighborhood facilities adequate to serve them. Just as good engineering practice required the planning of water plants, sewerage systems, bridges and the like with adequate capacity for the probable maximum load, so neighborhood facilities must be adequate for the capacity population of the neighborhood rather than the number of persons who may be living there at a given date.

3. Although New York City and Manhattan Island had a median of 0.78 persons per occupied room in 1940, the occupancy of new low and medium rent

* City Planning Commission *op. cit.* p. 5

housing projects in New York City approaches very close to one person per room in the great majority of cases. (See Tables 1 and 2). Furthermore, with the possible exception of the first year or two after construction, the relationship of persons to rooms has remained approximately the same for most of these projects over a period of years. This is due in some cases to a management policy of moving families to apartments most suited to the family size when changes in family size and vacancies in the proper size of apartment occur.

4. The proposed regulations on the basis of *rooms per gross acre* will apply only to new multi-family buildings, and will not apply to new or existing single or 2-family houses where the occupancy is likely to be considerably less than one person per room, or to existing multi-family buildings where a high vacancy ratio is likely to result in a lower overall occupancy measured in persons per room. In medium and low-rent apartments of modern design, vacancy ratios are likely to be very low. For the New York City Housing Authority projects, vacancy and collection losses on dwellings were less than .08 of 1 per cent in 1939 and only .03 of 1 per cent in 1941.* For all limited-dividend projects under the New York State Division of Housing, only .32 of 1 per cent of the apartments were vacant on December 15, 1938, and practically none in October 1943.* Furthermore new low and medium-rent apartments of good design with adequate neighborhood facilities, particularly playgrounds, would offer accommodations very attractive to families with children. Such families are more likely to average at least one person per room than those without children, since the average number of rooms that they can afford to rent is likely to be no more than that of families without children, although the number of persons is more. Consequently for new low and medium-rent apartments with adequate neighborhood facilities, an average occupancy very close to one person per room is likely to be reached.

5. In older buildings or those in the higher rent groups, or when considering *persons per room* for the city as a whole or selected areas, the effect of vacant apartments must be taken into account. This is done in Table 3, which shows an average occupancy for the city as a whole of about three-quarters of a person per room. In Queens and Richmond with large proportions of single-family houses, persons per room are considerably lower, in the other boroughs where apartments predominate, generally higher. In Manhattan, the many vacant apartments give a slightly lower median persons per all rooms than the city median. In the selected health areas, the newly built high-density sections such as the Grand Concourse and Dyckman Street areas have greater than the city median of three-quarters of a person per room. It is only in the typical one-family house area and the Park Avenue section that the median persons per occupied room is markedly below three-quarters of a person per room. In the Lower East Side and Columbia Heights only the rather heavy vacancies bring the median persons per all rooms somewhat below three-quarters of a person. In general, the data on selected health areas indicate that, except in very high rent areas, new unsubsidized building construction is likely to have about the city median of three-quarters of a person per room. In regard to very high income families, a building originally designed for them is likely to house lower income groups as it increases in age and factors of obsolescence tend to draw high income families to the newly built dwellings located in the more fashionable neighborhoods. Thus it is unwise to expect an occupancy of less than three-quarters of a person per room even in buildings originally designed for very high income families.

* See annual reports of the Authority for 1939 and 1941.

* State Division of Housing.

Table I. Average Household Size and Persons per Room in Public Housing Projects in New York City.

Project	Population December 1941	Average Household Size	Persons per Room
Clason Point	1,579	4.0	.93
Vladeck (City)	916	3.8	.96
Williamsburg	5,942	3.7	1.04
Red Hook	9,347	3.7	1.00
Harlem River	1,957	3.4	1.00
Queensbridge	11,062	3.4	.97
South Jamaica	1,515	3.4	.97
East River	3,865	3.3	.90
Vladeck (Federal)	5,129	3.3	.93
First Houses	384	3.1	1.00
Kingsborough	3,647	3.1	.88
Wallabout	633	3.1	.83

Source: New York City Housing Authority, Eighth Annual Report, 1941, p. 22-3.

Table 2. Average Household Size and Persons per Room in Limited-Dividend Projects Under the New York State Housing Law.

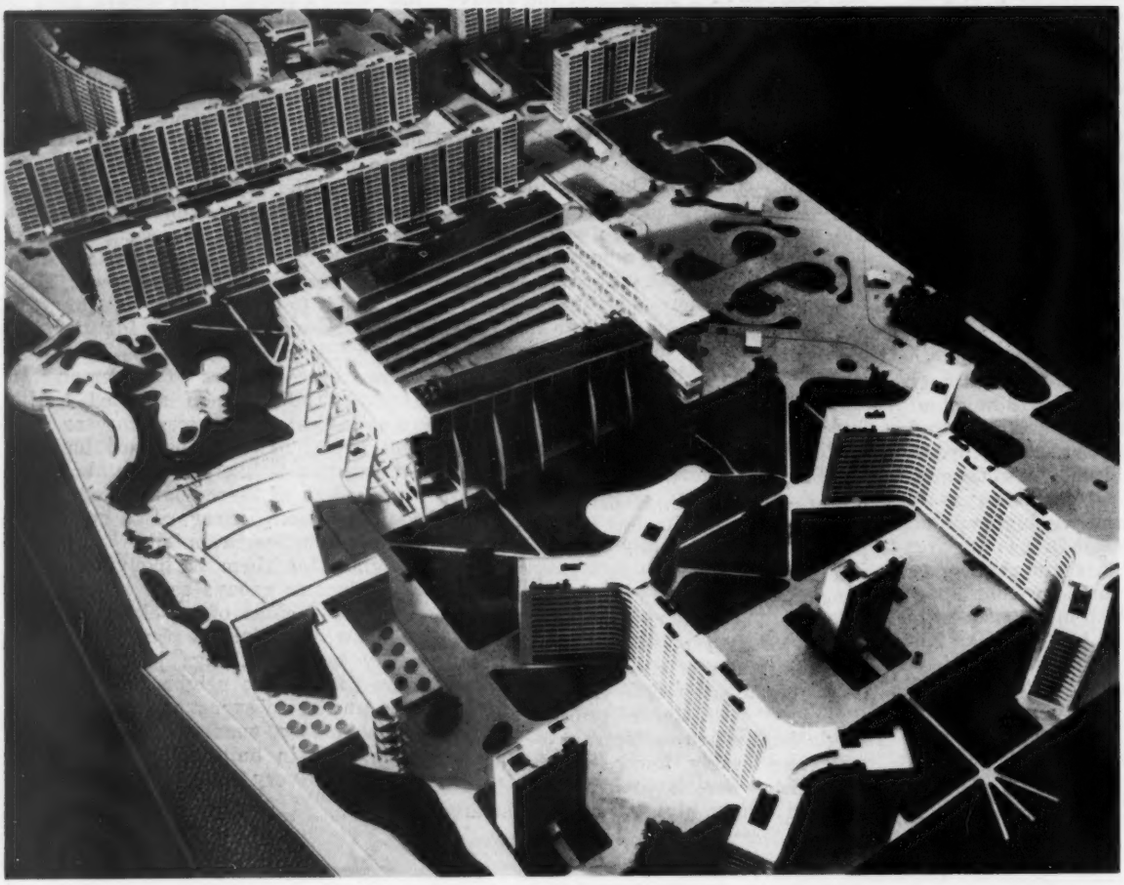
Projects	Population June 1943	Average Household Size	Persons per Room
Amalgamated Housing Corp.	2,700	4.3	1.17
Amalgamated Dwellings, Inc.	875	3.7	1.03
Farband Housing Corp.	463	3.6	1.05
Academy Housing Corp.	1,650	3.5	1.07
Manhattan Housing Corp.	145	3.3	.93
Stanton Housing Corp.	141	3.2	1.04
Hillside Housing Corp.	4,540	3.12	.92
Stuyvesant Housing Corp.	294	3.1	.97
Brooklyn Garden Apartments, Inc. Fourth Avenue project	496	3.0	.77
Boulevard Gardens Housing Corp.	2,600	2.7	.79
Knickerbocker Village, Inc.	3,771	2.4	.72
Brooklyn Garden Apartments, Inc. Navy Yard project	314	2.2	.66

Source: New York State Division of Housing.

Table 3. Persons per Room in New York City, its Boroughs and Selected Health Areas, 1940.

Borough	Per Cent of Occupied Dwelling Units with More than One Person per Room	Median Persons per Occupied Room	Percent of Dwelling Units Occupied	Median Persons per All Rooms
Manhattan	19.0	.78	88.8	.69
Bronx	24.1	.83	95.6	.79
Brooklyn	20.0	.79	94.0	.74
Queens	11.8	.69	91.7	.63
Richmond	12.2	.66	88.2	.58
City	18.8	.78	92.3	.72
Health Area No. & Location				
33.2 Bronx, Grand Concourse	.83		95.3	.79
40 Bronx, Western Westchester Ave.	.82		94.4	.77
85.1 Brooklyn, Ocean Parkway	.82		94.6	.78
1.2 Manhattan, Dyckman Street	.81		96.5	.78
6.2 Manhattan, Hamilton Heights	.78		93.0	.73
79 Manhattan, Lower East Side	.78		80.2	.63
10.2 Queens, Jackson Heights	.72		94.4	.68
23 Brooklyn, Columbia Heights	.72		88.4	.64
35.31 Queens, typical one-family house area	.64		96.7	.62
41 Manhattan, Park Avenue	.58		87.0	.50

Source: Computed from U. S. Census, *Population and Housing*, Statistics for Health Areas, New York City, 1940, Table 6. Average persons per room cannot be calculated, since data on total number of rooms are not available. However, the relation between the median and the first and the third quartiles indicates little skewness. This statistical measure indicates that the arithmetic average and the median are nearly identical.



Schematic Study of a Civic Center, *prepared in 1936 in London by Marcel Breuer and F. R. S. Yorke.*

STUYVESANT SIX

(Continued from page 70)

people. Its size and the fact that it has been actually designed and accepted by the authorities make it a precedent for postwar construction. The redevelopment of eighteen New York city blocks as one single property comes as a revolutionary experiment, not only as to housing, but as to city planning and capital investment.

The Corporation's approved project has been discussed in the press, pro and contra. It has been criticized mainly as to its social aspects: for the lack of community facilities, for tax exemption, for segregation, for the density of land used—some points of which criticism I agree with, some not.

What I strongly felt, however, observing the various reactions, was the curious lack of a deeper-going consideration from technical, functional, and human points of view; in other words, as an architectural and planning achievement. How are the apartments? How will the people live in their private units? How much air and sun will they have? How far need they go for their cars? Can they park them? How private are their windows? Will they receive standards of comfort and health on the level which planners and architects can offer today? To what extent is it possible to create improvements of the above points, without having to increase rents?

These professional points were probably sidestepped because such an analysis should preclude the presentation of another project, proving that the qualities I mention do not need to be impractical Utopias, luxuries, or merely nice ideas.

The thoughts above suggested the preparation of a comparative study. Economic considerations were to be the same as those upon which the corporation based its project.

As this study was intended mainly for comparative purposes, and as there was no financial backing from any source, many problems had to be excluded which are organic parts of the whole: relations of the project area to the surrounding areas, the traffic and communication problems of its adjacent streets, its relations to a "master" plan of Manhattan, social implications. It is a limited project, but by accepting the Corporation's economic considerations, I did not give up the aim to outline the human and functional standards which I believe essential for the "postwar," or for a long term investment.

The story is composed of two site plans, employing the same type of buildings: the VARIATION, with practically the same density as the Corporation's project, so an exact comparison of the solutions is possible;

and STUYVESANT SIX, which employs not relatively but fully satisfying standards as to window-to-window distances, park and play areas, and community facilities. The density of this project is about 19% lower than that of the Corporation's project, which latter does not sufficiently allow for the degree of healthful comfort and pleasantness I wish our postwar production could accomplish.

Twelve to fifteen stories give, according to accepted computations, the most rentable form of elevator type buildings. Fewer stories fail to use the duplex elevators to capacity and higher buildings add rapidly to costs of special machinery, service piping, and structural work. The buildings in these studies are fifteen stories.

"Stuyvesant Six" suggests:

Cross Ventilation:

which would certainly be warmly appreciated by most people in this climate, to relieve the humid heat of summer days and eliminate the usual mixture of kitchen odors in stair halls and corridors. To achieve this without losing on elevator efficiency, a new type of apartment building had to be invented. In each wing on three sides of a central communication tower, every third floor may be called an intermediate one. It serves as an approach on level to apartments type "D" and also for the two apartments "B" on the floor above and below. Apartments "A" are approached directly on the level from halls between the intermediate floors. This system gives, to two-thirds the total number of apartments, complete cross ventilation with about half of the remaining third having corner ventila-

(Continued on page 116)

famous CHATEAU THIERRY modernized with HOFFMAN VALVES AND TRAPS!

Hoffman No. 8 Trap

U. S. ARMY TRANSPORT CONVERTED INTO A COMPLETELY MODERN HOSPITAL SHIP

This veteran transport for twenty years has carried troops to posts throughout the world. Today, at a cost of $2,000,000 it has been remodeled and commissioned as a hospital ship with a total capacity of 515 patients.

Modernization of the heating system was part of the conversion program. 331 Hoffman No. 80 Packless Radiator Valves and Hoffman No. 8 Traps were installed to make the heating comfortable, efficient and to conserve steam.

Hoffman Specialties make any steam heating plant modernization a genuine success. Not only are they recognized by critical steam plant operators as highly efficient units, but they have features which amazingly prolong service life.

In Hoffman Traps, for example, the parts subject to wear are renewable. Their thermostats are made of non-corrosive metal, full of spring, long-lived in spite of countless flexings and high temperatures.

To stretch fuel and assure comfort, specify Hoffman Steam Specialties. Remember that Hoffman engineers are always available for consultation on your heating problems.

Hoffman No. 80 Packless Radiator Valve

SEND FOR THIS BULLETIN

Contains complete information and engineering data on Hoffman Traps.

HOFFMAN

Controlled Heating

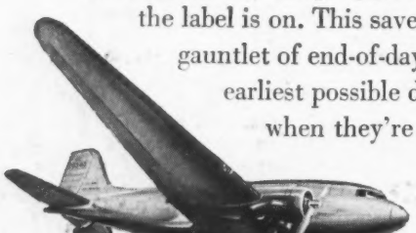
STEAM HOT WATER

HOFFMAN SPECIALTY CO., Dept. PP-6 1001 YORK ST., INDIANAPOLIS 7, IND. MAKERS OF VALVES, TRAPS, HOT WATER HEATING SYSTEMS, CONDENSATION AND VACUUM PUMPS... SOLD EVERYWHERE BY WHOLESALERS OF HEATING AND PLUMBING EQUIPMENT.

When shipments are ready—

LET 'EM GO!

WHEN AIR EXPRESS shipments are allowed to lie around waiting for end-of-the-day pick-up, you're throwing away a chance for earlier delivery. *Ship when ready!* Call AIR EXPRESS the instant the label is on. This saves your shipment from running the gauntlet of end-of-day congestion at the airport, assures earliest possible delivery at destination. Remember: when they're ready—*let 'em go!*



A Money-Saving, High-Speed Wartime Tool For Every Business

As a result of increased efficiency developed to meet wartime demands, rates have been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks — with 3-mile-a-minute service direct to hundreds of U.S. cities and scores of foreign countries.

WRITE TODAY for "Vision Unlimited"— an informative booklet that will stimulate the thinking of every executive. Dept. PR-6, Railway Express Agency, 230 Park Avenue, New York 17, N. Y., or ask for it at any local office.

AIR EXPRESS
Gets there FIRST

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

Views

(Continued from page 96)

From the Seabees

Dear Editor:

I received a fine form letter from you, forwarded by my wife. It certainly is nice to know that your company and architects at home still give a thought to us fellows way out here. We all are longing for the day when we can get back into circulation again. I don't have any real ideas for postwar building right now except, win this war.

You probably noticed this strange stationery I am writing on. It is Jap something or other. It is sort of a prize of a recent campaign. You of course know they write right to left, and downward, with those silly looking figures you see at the left. This is the rice paper they produce there, instead of using paper pulp as we do.

I have seen many interesting and horrible sights of war, but I am not permitted to write about them now.

I am a Seabee, in one of many construction battalions. You'll find that almost every one of their jobs was built in record time, and helped the armed forces a step or two closer to strike at the Japs.

I am having my wife save my copies of PENCIL POINTS so I can use them as a reference. If you ever have any old magazines or back copies that clutter up your office I am sure the chaplain would be glad to take them off your hands, and fellows in the Seabees would appreciate a chance to read or study them in the evenings.

JOHN M. LASSON, Seaman First Class
74th U.S.N.C.B.

On the A.I.A.

Dear Editor:

We believe the Institute should . . .

Your editorial credo (April issue, PENCIL POINTS) is axiomatic.

The transformation of today's needs into a contemporary architectural law and language cannot be expected from the initiative of official bodies, but will be the result of a long-term education of the people as to what they have to demand from their municipal and state governments for a healthy, because genuine, life.

To engage energetically in this national education will be the most evident proof of the Institute's existence.

ERIC MENDELSOHN, A.I.A.
Architect

(Continued on page 106)

Every recent survey shows that post-war home owners will demand an upward-acting garage door. The Crawford Door Company (maker of Craw-Fir-Dor hardware) will be ready for this enlarged market with a better product. Crawford today is gaining valuable experience by manufacturing precision airplane parts... and Crawford hardware is being further improved through constant research.
Every feature making for easy installation, long life and trouble free operation is being rigidly tested in the Crawford Door Company's engineering research department.
REMEMBER
—Craw-Fir-Dor is economical, dependable, easy to install. Architects, builders and customers approve Craw-Fir-Dor.
Craw-Fir-Dor
SELF-ENERGIZING • ONE PIECE • OVERHEAD TYPE
GARAGE DOOR
For special residential or industrial installations, write
CRAWFORD DOOR CO.
DETROIT, MICH.
who make a complete line of sectional overhead-type doors.
FIR DOOR INSTITUTE
Tacoma 2, Washington

Views

(Continued from page 104)

B.P.F.

Dear Editor:

Nice going on Don Graf's new entry, "Building Product Facts." And here's hoping you can keep on for several years with BPF in the same form as you started it.

It's a worthy running mate to Don Graf's Data Sheets.

CLARENCE A. SMITH
Architect

On Clarity

Dear Editor:

Greatly impressed (and concurring) with Editor Reid's request for clarity in architectural presentation, I carefully examined PENCIL POINTS and found a few contradictions within which necessitate comment. May I?

The magazine presents too casual a format. (Now I don't think P.P. should *become* a slick job, but look:)

Views, News and *Reviews* are cramped into a grey block, squeezed between ads which tend to overpower the text, and in general are most difficult to read or follow; the only page which had balance was "product progress," with just the right amount of white space between paragraphs, etc.

The text of leading articles suffered similarly, compressed into one or two pages, contrasting violently with the openness of the photo pages; the last seemed to belong in another magazine.

An article with illustrations, on a technical subject, such as "Lighting," placed between Harriman & Wurster, is a chasm one must leap—but the article is good. Giving it more prominence might help get more readers.

While you gave Wurster's address in *Views* first call, his views are most decidedly welcome to us *un*registered architects. His courageous stand on F. L. W. on education and relaxing of registration exams, etc., presages action toward letting down the barriers of recognition to many designer-draftsmen like myself. I heartily endorse and support Wurster's views and I believe his "view" should have received even greater emphasis in the March P.P. than it did.

Perspectives—excellent—we need to know more about our architects, planners, engineers, and designers, than we do. Anyone who is presented with a spread such as he deserves should have his proper perspective!

Is it really necessary to sandwich textual matter between advertising? Today's ads are *all* read because of their inherent interest. Is it done to make your readers read your text? Can you perhaps employ san-serif type or rearrange the ads to suit the text instead of vice-versa?

LEONARD SCHEER
Designer

Kick

Dear Editor:

Please stop sending me your "New Pencil Points." It is of no value to me. I used to take that magazine for years, and I have volumes of them bound in leather. It was then a publication full of real architecture of value and interest to the architect. I wouldn't take anything for those old numbers.

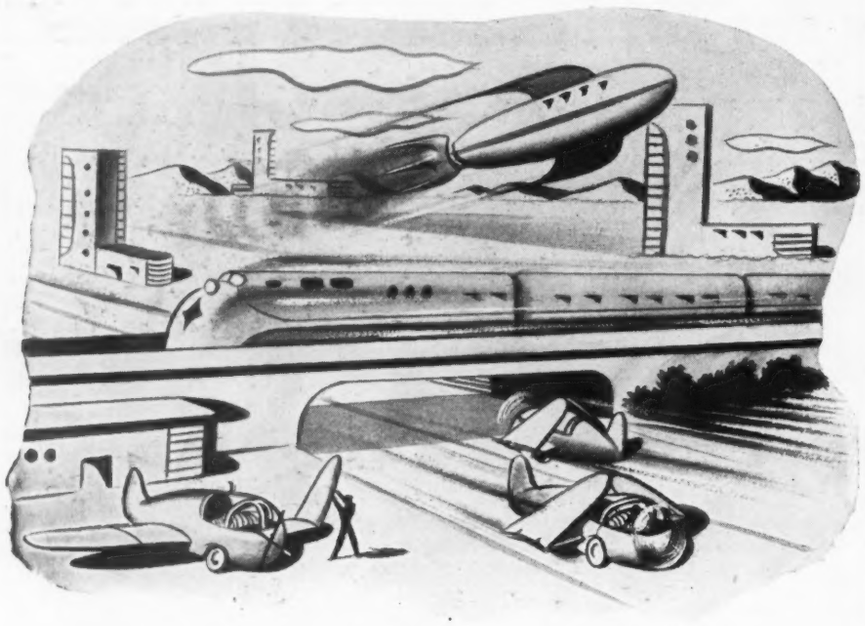
But this "New....." is all full of junky modernistic stuff that every town in the country is being cursed with. Any jerry builder can do that sort of thing without an hour's study of architecture.

I will send you under separate cover the numbers you have sent.

Yours for less corrugated sheet metal, less insulation board, and less modernistic anti-architectural fads.

HAROLD GIMENO
Architect and Structural Engineer

(Continued on page 104)



...of shoes and ships and sealing wax

Some of the current crop of postwar predictions are truly fantastic. Planes with collapsible wings riding the road like automobiles — trans-oceanic rocket delivery service whisking Madam's gowns from Paris to New York in 20 minutes — gyro-stabilized super-streamlined trains roaring across country at 300 miles an hour... perhaps.

But, taking first things first... tomorrow's *immediate* problems will be solved by practical men thinking practical thoughts — *today*. Tomorrow's progress will reflect the sound application of lessons learned by a review of past accomplishments.

Take Sedgwick elevators and dumb waiters, for example. Before the war they moved men, material and merchandise up and down. Today they serve as airplane elevators on carriers — as ammunition hoists, galley dumb waiters and special between-deck elevators. Tomorrow Sedgwick elevators and dumb waiters will do the same job they did before the war. But to improvements in design and construction will be added the results of today's experience — invaluable refinements in exact leveling, smooth braking, positive limiting of travel.

These are but a few of the advantages Sedgwick equipment will offer postwar planners — sound developments of research, planning and building.

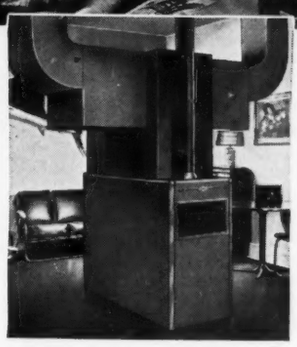
So if you're planning today for tomorrow—if you're looking for better equipment to move men, merchandise and material up and down—chances are we can help.

Our engineers will be happy to work out the solution to whatever vertical transportation you might have, and show you how Sedgwick improved elevators and dumb waiters provide safer, surer, more economical operation.

"MEN WHO KNOW ARE SOLD ON SEDGWICK"

Sedgwick MACHINE WORKS, INC.
164 WEST 15th STREET NEW YORK 11, N. Y.
Since 1893 designers and manufacturers of specialized lifting equipment
ELEVATORS • ROTO LIFTS • HOISTS • DUMB WAITERS

Each room in our home has been transformed into a haven of delightful comfort. Windows are ever-closed, shutting out all outside jangling noises --- and my wife assures me the drapes and furniture will last much longer.
Colliers



Another reason why

Servel's New *All-Year* Gas Air Conditioner

is the next essential for the home of tomorrow

Year-round comfort indoors—no matter what the weather outside—is naturally the most important blessing bestowed by Servel's New *All-Year* Gas Air Conditioner. But there are additional reasons why users call it "The next essential for the home of tomorrow."

Besides supplying cooled, dehumidified air in summer, and warmed, moistened air in winter, the Servel *All-Year* Gas Air Conditioner makes homes quieter, healthier, cleaner. The "ever-closed windows" afford extra privacy, reduce danger from damage due to sudden summer storms. The removal of pollen particles, as well as dust, from the filtered air supplied by this system, affords welcome new relief for asthma and hay fever sufferers.

So you can be sure your clients will want Servel's New *All-Year* Gas Air Conditioner in their post-war homes—and places of business, too. And you'll be able to give it to them. For it's been tested, proved, and acclaimed in more than 300 test installations all over the country. Mass production will begin just as soon as material and capacity are released from war work.

Write today for complete information on Servel's New *All-Year* Gas Air Conditioner, "The next essential for the home of tomorrow." Address Servel, Inc., Evansville 20, Indiana.

SERVEL GAS REFRIGERATORS are standard equipment in the nation's finest apartment houses

SERVEL **Inc.**

America's Leading Makers of Modern Gas Appliances

Views

(Continued from page 106)

Approbation

Dear Editor:

Thank you very much for the publication of our scholarship announcement in the May issue. I want you to know that we all appreciate your cooperation.

Incidentally, the May issue in my opinion is a very good one. I like your editorial "Memorials? Yes—But No Monuments!" Also the house by Willis Mills and another by Henry L. Kamphoefner interest me as both of these boys were formerly under my tutelage as students.

L. C. DILLENBACK
Professor of Architecture,
Syracuse University

More Architects at War

Since the publication of the list of architectural men in uniform (December 1943), additions and corrections have continued to come in. The following information brings us up to date as of this writing. Additions and corrections were published in the Views *pages of the February, March, April, and May issues. (For abbreviations see previous issues.)*

New Jersey

EDWIN R. CLOSS, Capt. (USA), (C.E.)

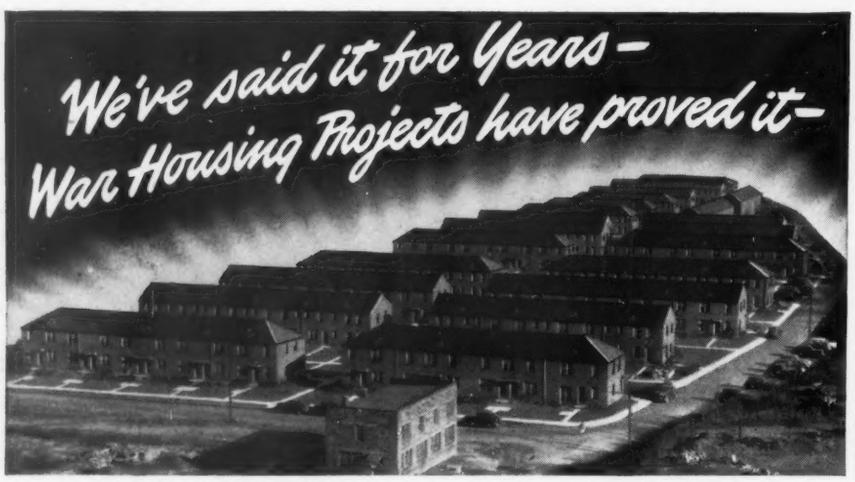
C. HARVEY CONVERY, Lt. (j.g.), (USNR)

BERNARD M. COWPERTHWAITE, Lt. (j.g.), (USNR)

KENNETH WHITNEY DALZELL, Jr., Lt. (USAAC)

North Carolina

WALTER D. TOY, Jr., Capt. (USMCR)



CENTRAL HEATING IS THE IDEAL SYSTEM FOR THE MODERN COMMUNITY

Mark up another contribution of the war toward better living in the future! Intelligent post-war community planning now fully recognizes the advantages of central heating: making it possible to purchase heat as a commodity like gas, electricity, or city water *at savings of 15% or more:* A powerful impetus has been given to this movement by the experience of central heating in war housing developments. The Elizabeth Park Housing Project in Akron, illustrated above, is a case in point.

RIC-WIL CONDUIT CONNECTS DWELLINGS TO CITY STEAM MAINS 2000 FT. AWAY

Welded into a single piece 700 feet long, this pipe was lowered into the shallow trench beside it, a section of the 2000 foot connection to the city main.

This project, comprising 276 family units is heated by steam supplied by Ohio Edison Company, Akron, Ohio utility. In addition to the 2000 feet of Ric-wiL Insulated Pipe Units connecting the project to the city mains, another 7000 feet are used for steam, return and hot water lines on the project itself. Conduit was furnished complete with prefabricated field accessories and installed in record time—with minimum interference with other construction. The completed piping system is efficient, dependable and maintenance-free, enabling the utility to serve the project with steam at rates considerably under the cost of individual heating plants.

ANY COMMUNITY CAN ENJOY THESE ADVANTAGES:

- Savings of 15% or better in overall fuel consumption.
- Elimination of furnace or boiler tending by consumer.
- Promotes cleanliness in buildings heated.
- Provides extra room in building basements.
- Decreases fire and explosion hazard.
- Reduces smoke and soot, provides cleaner, healthier community.
- Eliminates private coal delivery and ash removal.
- Gives uniform, clean heat quickly, whenever needed.

For information about Ric-wiL Conduit for central heat distribution get in touch with your nearest Ric-wiL agent or write to us direct.

RIC-WIL INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO
AGENTS IN PRINCIPAL CITIES

Notices

ARTHUR F. FITZGERALD, community planner and specialist in airport development and land planning, has joined the executive staff of ROBERT BRUCE HARRIS, Chicago landscape architect, whose office specializes in postwar planning of cities, parks, college and school campuses, airports, industrial site planning, housing projects, subdivisions and recreational development.

FRANCIS CHIAVERINI, Registered Architect and Engineer and Rhode Island Chief of Division of Public Buildings, has been appointed Supervising Architect for Public Buildings Post War Planning, by Daniel J. Ryan, Director of the Rhode Island Department of Public Works. Headquarters are at the Rhode Island Armory Mounted Commands, 1051 North Main Street, Providence, R. I.

VICTOR BOHM, Architect, announces the opening of his office at 1650 Broadway, New York 19, N. Y.

Partners Wanted

Man with long practice in architecture and engineering desires partnership in well established firm of two or three members. Reply C/O Editor, PENCIL POINTS, Box No. 14.

Part-time Work Wanted

Architectural Engineer available for night work: drafting, structural architecture, piping, estimating, specifications. Reply C/O Editor, PENCIL POINTS, Box No. 15.

FOR SALE . . . COLLECTION OF PENCIL POINTS

All issues from No. 1, Vol. 1 through 1941; also Monographs and miscellaneout architectural magazines.

To highest bidder—proceeds to Red Cross. Seller will not deliver. James Wynborough, 101 Park Ave., N. Y. C.

Reviews

(*Continued from page 22*)

planning at Harvard University. Prepared by Prof. John Merriam Gaus and Charles Dyer Norton, Professor of Regional Planning, it is far more than a plan for Harvard, it is a summation of important developments, since 1880, of various types of planning; and in making a plea for undergraduate guidance to the planning profession, the report presents an interesting thesis of its own concerning basic planning.

Food For Thought. Toronto, Canada. April 1943.

Eric R. Arthur in "Town Planning and Tomorrow" has done an excellent job of putting into words the effects of the industrial revolution in any typical town. His article is the introduction to a longer one by E. G. Faludi, "The Urban Reconstruction of Canada." Chiefly concerned with interesting the people in planning for their own future, Mr. Faludi concludes that this must be done through actual building of the "types of houses and communities where they would be happy." It seems obvious, however, that the people's support is needed before and not after the building of their better houses.

The Improvement of Local Housing Regulation Under the Law. An Exploration of Essential Principles by the Subcommittee on Housing Regulation of the Committee on the Hygiene of Housing, American Public Health Association, 310 Cedar St., New Haven, Conn. Nov. 1942. Price 25¢.

Reprinted from the American Journal of Public Health, this booklet gives the impression of thorough and authentic research into the past and future of housing laws. It is divided into five portions, The Need for Reexamination of Housing Controls, The Legal Basis of Housing Regulation, Specific Objectives and Content of Housing Regulations, Administration and Enforcement of Housing Regulations, Toward a Synthesis of Regulatory and Constructive Programs. Since no housing of decent standard can be achieved or maintained without an adequate, progressive housing law, it is surely up to our cities to undertake immediate formulation of such a law.

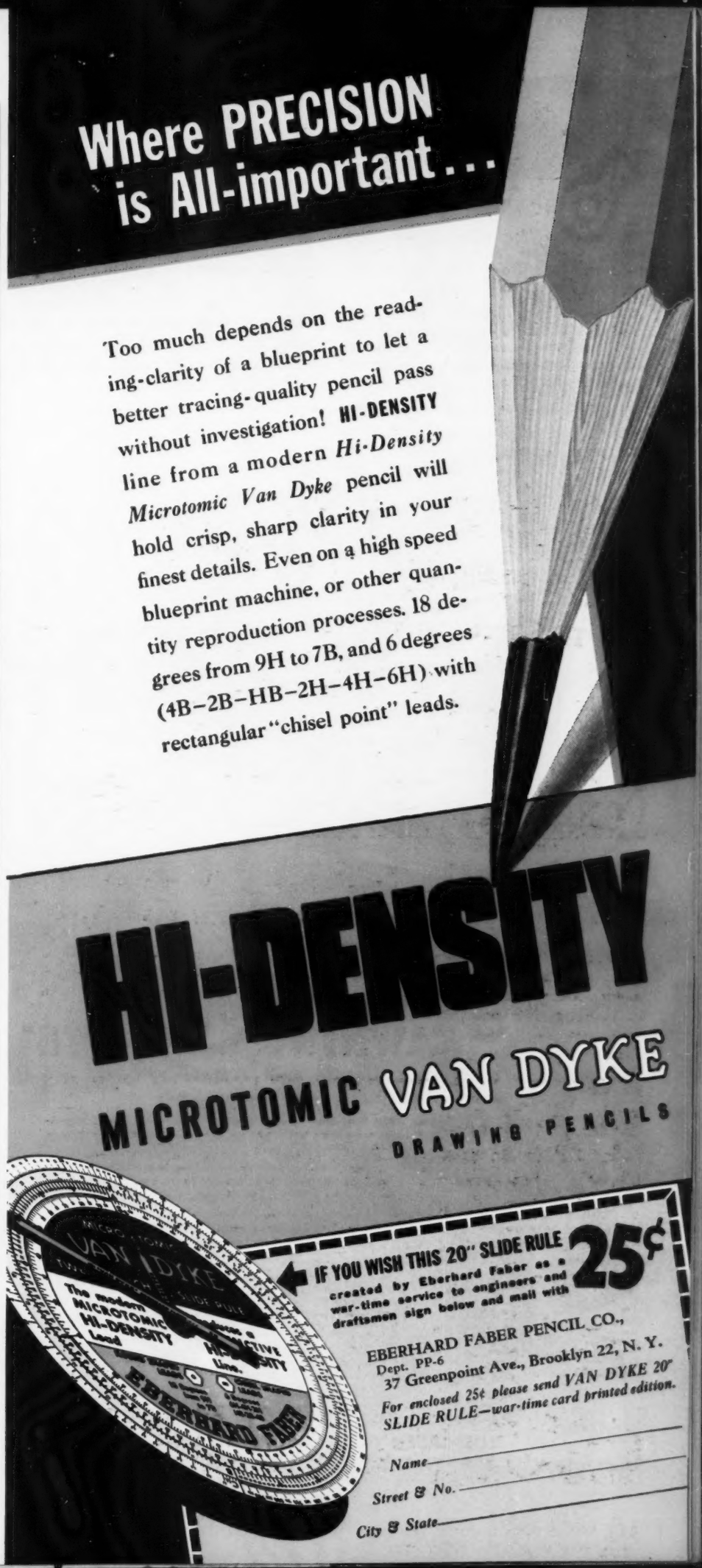
Joint Statement on the Reconversion of Industry to Peace. Agriculture, Business and Labor Committees on National Policy of the National Planning Association, 800 21st St., N.W., Washington, D. C.

The serious problem of overexpanded industries, tremendous stocks on hand, and war contracts to be terminated at the war's end need full cooperation between government and private enterprise for their solution. This leaflet suggests, in general terms, a method for this cooperation.

(*Continued on page 112*)

Where PRECISION is All-important . . .

Too much depends on the reading-clarity of a blueprint to let a better tracing-quality pencil pass without investigation! HI-DENSITY line from a modern *Hi-Density Microtomic Van Dyke* pencil will hold crisp, sharp clarity in your finest details. Even on a high speed blueprint machine, or other quantity reproduction processes. 18 degrees from 9H to 7B, and 6 degrees (4B–2B–HB–2H–4H–6H) with rectangular "chisel point" leads.



IF YOU WISH THIS 20" SLIDE RULE created by Eberhard Faber as a war-time service to engineers and draftsmen sign below and mail with 25¢

EBERHARD FABER PENCIL CO.,
Dept. PP-6
37 Greenpoint Ave., Brooklyn 22, N. Y.

For enclosed 25¢ please send VAN DYKE 20" SLIDE RULE—war-time card printed edition.

Name_____
Street & No._____
City & State_____

Reviews

(Continued from page 111)

Organization for Metropolitan Planning. American Society of Planning Officials, 1313 East 60th Street, Chicago 37, Ill. 1943. Price $1.00.

The American Society of Planning Officials has conducted a nation-wide competition for the best "Proposal for the Organization and Operation of a Regional Council in a Metropolitan Area." First and second prize-winning essays are published here in booklet form. Believing that citizens and industry evade their responsibility to the central city from which they derive their profits when they move outside of city limits to find lower tax rates, the Society has set out to find the type of control needed to prevent such exodus. There are many ideas in the essays suggesting remedies for the situation, though no one proposal is concrete enough to put into action. Essays are by Harvey F. Pinney, O'Brien Boldt, Norman J. Gordon, C. McKim Norton, and Frederick P. Clark.

Planning 1943. American Society of Planning Officials, 1313 East 60th St., Chicago, Ill. May 1943.

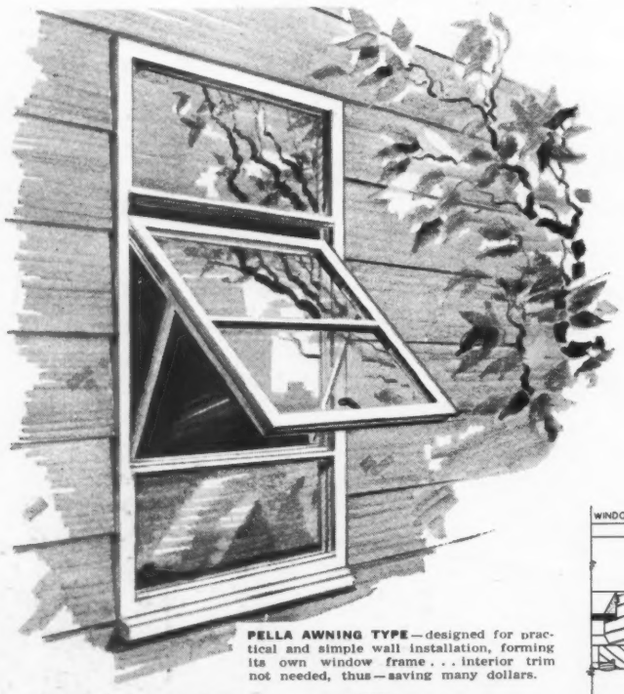
Published in attractive book form, the proceedings of the Society include discussions of: Planning in New York, National Planning Problems, The Effects of War Upon American Cities, Traffic and Transportation Problems, Regional Planning, Plans by Business and Industry, and other phases of the planning picture. It is an extremely meaty small volume with contributions by Fiorello La Guardia, Robert Larabee, Beardsley Ruml, Bror Dahlberg, and many others with something important to say.

Public Control of Highway Access and Roadside Development. Public Roads Administration, Federal Works Agency. By David R. Levin. U. S. Printing Office, Washington, D. C. Price 15¢. 1943.

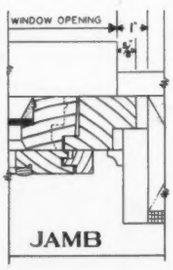
The terrible toll of life, the delays and crowded conditions on highways in general show that the transportation system lags far behind the development of vehicles and the desire of all for more attractive means of travel. The author has made a study of laws regulating highway access and existing highways and found a startling lack of progress. He has made a thorough appraisal of the situation throughout the country and a comparison of laws to point out what is needed. It is an extremely comprehensive survey.

Selected Items from the Urban Reference. The Bureau of Urban Research, Princeton University, Princeton, N. J. Vol. 2, Nos. 9, 10, 11.

This is a compilation of reviews of recent literature having to do with urban planning. Included are "Suburbs" by Chauncey D. Harris; "Wartime Population Shifts Shuffle Major U. S. Markets," a survey by J. Walter Thompson Co.; "How Much Post-War Migration?" by Jerome S. Bruner; "Nonsense about the City of Tomorrow," concerned with debunking most predictions about the postwar world, by John Anderson; Talbot Hamlin's "A Public Opinion for Planning," reviewed earlier in this column; "Development of Municipal Airports," by T. E. Flaherty, advice on preliminary airport plans; "Aviation Planning Bulletin" from the Department of Aeronautics, State of Minnesota; "Standards for Neighborhood Recreation Areas and Facilities," National Recreation Association, giving minimum playground areas according to population and other standards; "Summary of Preliminary Report on Tentative Standards for Neighborhood Recreation Areas," Detroit City Plan Commission; "Expenditures per Pupil in City Schools, 1940-1941," Mary Ella W. Banfield, from U. S. Office of Education; "Some Considerations in Educational Planning for Urban Communities," Katherine M. Cook, from U. S. Office of Education; "Weather, Climate, and City Planning" by A. E. Parr, Museum of Natural History, New York, which suggests meteorologists do city planning, since the author believes adjustment to the forces of the atmosphere has been neglected in planning; "Freeways for the Region," Regional Plan Commission, Los Angeles, California.



PELLA AWNING TYPE—designed for practical and simple wall installation, forming its own window frame . . . interior trim not needed, thus—saving many dollars.



LOW COST *Pella*

"AWNING WINDOWS"

For Standard 2x4 Frame...Thin Wall...Masonry Construction

Made by Makers of Famous Pella Casement Windows

No FRAMES SASH WEIGHTS BALANCES

White Pine Sash..Toxic Treated.. These extremely ingenious windows set right in the studding! They do not require any frames, sash weights or balances. Units come completely assembled so no fitting is necessary on the job... Flush type lock handle is an exclusive feature. Units can be glazed with standard size lights...Available with screen and storm sash—inside screen and storm sash are interchangeable; top hinged or channel guided. Pella "Awning" Windows comply with Federal Housing Authority Specifications...WRITE FOR FREE DETAILS! Mail a post card TODAY! Ask for your FREE set of full-size details on Pella "Awning" Windows. Address Dept. 164

IDEAL AND EASY TO ADAPT FOR SPECIAL JOBS LIKE THESE

MULTIPLE UNITS of Pella "AWNING" WINDOWS made to your specifications are available when quantities warrant. Wide range of combinations possible. For schools, office buildings, etc. upper sash can be made to ventilate.

"4-CYLINDER" HOUSE designed by Arthur T. Brown, A. I. A. of Tucson, Ariz. incorporates Pella "AWNING" WINDOWS. Pella's broad, horizontal lines give house the appearance of greater size.

Patent No. 135609

ROLSCREEN COMPANY, PELLA, IOWA

Pella Rolscreens • Pella Venetian Blinds • Pella Casements

Making a sales force of store fronts

You can combine customer appeal and functional design in store fronts when your plans include the use of clean, smooth, colorful, porcelain enameled sheets.

Inside the store too—for shelving, trim, racks, show cases, display fixtures, counters and working surfaces—the use of this easily cleaned, durable material effects worthwhile savings in labor costs and in reduced damage to destructible goods.

The enduring beauty of the porcelain enameled finish depends upon selection of the right metal base. For this purpose—by a special process—U·S·S VITRENAMEL sheets are produced.

These sheets are light and strong, can be drawn, stamped and formed, are also sufficiently rigid to use for flat areas. Their treated surface enables the frit to establish a firm bond when fired. The uniformly high quality of U·S·S VITRENAMEL Sheets is assured by rigid control of each special process in their production.

You can safely recommend U·S·S VITRENAMEL based enameled panels to your clients when they want to build "sales appeal" into their stores, inside and out.

For general information, consult our "Architectural Sheets" section in Sweet's Catalog. Upon request, our technical staff will be glad to discuss your individual problems with you in full detail.

Write us today, their service is free.

U·S·S VITRENAMEL SHEETS

CARNEGIE-ILLINOIS STEEL CORPORATION
Pittsburgh and Chicago
Columbia Steel Company, San Francisco,
Pacific Coast Distributors
United States Steel Export Company, New York

UNITED STATES STEEL

News

(Continued from page 15)

ning engineer, who states a large part of this is in the regional highway field, one project including a large apartment building at the city's newer airport. A 6-year civic improvement plan adopted in 1941 will be in use immediately after the war. Last year the city council appropriated $40,000 per year to carry on the work.

Dearborn, Mich.

Dearborn, Michigan, has plans ready for $500,000 worth of public works construction as soon as materials become available, reports Frederick R. Storrer, secretary of the Dearborn City Planning Commission. Plans for an additional $750,000 worth of projects are nearing completion.

Tennessee Valley Authority

David E. Lilienthal, chairman of the Tennessee Valley Authority, stated that the test of democratic planning is whether the people will fight for it, as the people of the Tennessee Valley are today fighting to protect and maintain the integrity of the TVA regional program of planning and action, now "threatened with a death sentence" from the Senate. He stated TVA is the first planning agency of its kind in the United States; it has successfully avoided politics for 11 years; TVA's experience throws important light on the modern task of making material work for men; it is still a low-income region, one far below the country's average, but the direction and trend have been unmistakably upward to *a national benefit.* He stressed the significance of the *method,* embodying "voluntary, ardent, and enthusiastic participation of the people and their institutions," of carrying forward the Valley's enterprise. Voluntary coalition among TVA groups would have been impossible, he said, but for one essential provision written into TVA law by Congress—the fact that TVA is *decentralized,* is not part of a Washington bureau, is responsible not alone for plans but for results. He stated that it had been pointed out to him by city planners that the great urban centers of America stand today where the Tennessee Valley stood in 1933, in one respect: they are failing to provide their citizens with the opportunities for wholesome and satisfying living.

Objectives

Carl H. Chatters, executive director of the Municipal Finance Officers' Association, said that municipalities best fitted to meet any war or postwar demands that may be made upon them will take these constructive steps now:

Establish reserves of money and credit.

Re-organize activities.

Remove shackles imposed by state constitutions, state statutes, and local laws and charters.

Develop realistic plans around a master plan.

The ASPO plans to publish soon all papers and discussions of the meeting under the title, *Planning 1944.*

New Officers

Officers elected for the forthcoming year are: Wilson W. Wyatt, re-elected president; Charles S. Ascher (NHA regional representative of N. Y. City), treasurer; George S. Wehrwein (member of Wisconsin State Planning Board), vice president; Walter H. Blucher of Chicago, executive director.

Nearly 200 cities and towns—more than 86% of the population of the New York region—now have necessary local planning machinery and many have groundwork laid for postwar unified community building and development.

Thus reports the Regional Plan Association of New York, basing its statements on a recent survey in New York, New Jersey, and Connecticut. In the New York and Connecticut portion of the district about half the municipalities have planning boards; about a third in New Jersey have them. However, only 85 of the 200 boards in the region are listed as having budgets!

(Continued on page 120)

High Altitude HEATING FOR BUILDINGS

A Dunham Differential Vacuum Heating System, by means of various "altitudes"—or more exactly, sub-atmospheric pressures—automatically raises or lowers the temperature of the steam being circulated, thus balancing the heat supply with the heat loss of the building. This results, not only in *unvarying* room temperatures regardless of weather changes, but in material saving of fuel which is so vital to the continuous transportation of supplies to our Armed Forces. Fuel conservation will be a dominant requirement after the "duration" and this is the moment to consider Dunham Differential Heating for post-war building. Vast housing projects are already "on the boards" of architects and engineers for release when Victory is in our hands. For such huge undertakings only Dunham High-Altitude Heating will prove satisfactory in economy, in performance, in low upkeep cost and in ease of maintenance. No large building management can justifiably ignore these factors.

MAY WE MAIL YOUR COPY?
May we send you a new Brochure on High-Altitude Heating which explains and describes the system together with performance data on outstanding buildings.

BUY WAR BONDS AND KEEP THEM

DUNHAM *makes fuels go further*

C. A. DUNHAM COMPANY
450 E. OHIO ST., CHICAGO 11, ILL.

Toronto, Canada London, England

UNDER THE NATION'S ROOF

June, 1944

The "KEEP OFF" sign is being removed from the roof of the future. Architects more and more are designing to make valuable roof areas truly and literally "functional".

Hospital roofs with sun deck and recreational areas for convalescents; apartment roofs with real gardens and pools; city schools with sun-bathed play areas on spacious roof decks . . . these typify the trend to make the roof more useful than its basic "keep the rain out" purpose.

Such use of roof areas is not fantastic or "freak" thinking. There are many successful examples in use today. It's all in the "know-how". Ruberoid has developed sound, practical, tested specifications. They divide themselves into four types:

GARDEN ROOF – on which grass, flowers and small shrubs can grow year after year with no more attention than those on your lawn. Made possible by effective RUBEROID design of drainage and flashings. Cost is little greater than conventional promenade tile.

PROMENADE ROOF – a simple, practical, efficient method of installing clay promenade tile without the mess, weight and expense of a mortar bed. Entire application is confined to one trade, so there will be no divided responsibility. Particularly adapted for playground roofs on hospitals, schools, office buildings, etc.

HEAVY TRAFFIC ROOF – a husky, tough, concrete surfaced roof on which factory trucks may be used constantly, on which oil drums may be stored and where any kind of activity (that would not damage a good concrete sidewalk) may take place year after year. The whole trick is in knowing how to pour the slab and what to put under it. Cost not excessive.

LIGHT TRAFFIC ROOF – a permanent roof surface of black mastic material —requiring no expansion joints and very little, if any, annual maintenance. Relatively low in cost and adapted only to light foot and hand truck traffic. Gives excellent results as an inexpensive playground roof for schools.

Write your nearest RUBEROID office for complete specifications.

The RUBEROID Co.

Asphalt and Asbestos Building Materials . . . Industrial Insulations

For up-to-the-minute information on your roofing and building problems consult our nearest sales office:

NEW YORK (18)—500 Fifth Ave. • CHICAGO (1)—307 North Michigan Ave. • BALTIMORE • ERIE • MILLIS (Boston) • MINNEAPOLIS • MOBILE

STUYVESANT SIX

(Continued from page 102)

tion (in the end wings). The cost of private stairs for one-third of the apartments has been fully considered in the comparative computation of rents.

Privacy of Windows:

To avoid the view into the neighboring windows diagonally across the court, the rectangular side wings of the Corporation's project are replaced by a "Y" shaped system. The building blocks are set in a pattern which increases the distances between opposite windows about 2½ times. (About 1½ times in the "Variation," which maintains the density of the Corporation's project for comparative purposes.) The *minimum* block-to-block distance of "Stuyvesant Six" has the width of Park Avenue, sidewalks included. The majority of the blocks, however, have twice this distance between.

Sun and Light:

By avoiding the deep shadows between side wings at right angles, by the increased distances between the buildings, and by the orientation of the blocks, almost all apartments enjoy winter sun, and for longer each day.

Balconies:

I think every apartment in multi-story buildings should have balconies. No parks, no roof terraces can replace the intimacy and real usefulness of even a small open area on the same level. You can watch the baby, have cigarettes, books, your radio, stationery, without special effort. In two-thirds of the apartments the balconies are adjacent to the kitchen, and connected with a service hatch (window). A built-in, waterproof breakfast table and bench is suggested, so the relatively narrow (4'-3" wide) balcony can be efficiently used for dining, sunning, etc.

Storage:

No basement areas are used for garages. All space is reserved for the tenants' storage compartments. Closet capacity of the apartments themselves is considerably increased; in some types doubled.

Site Plan:

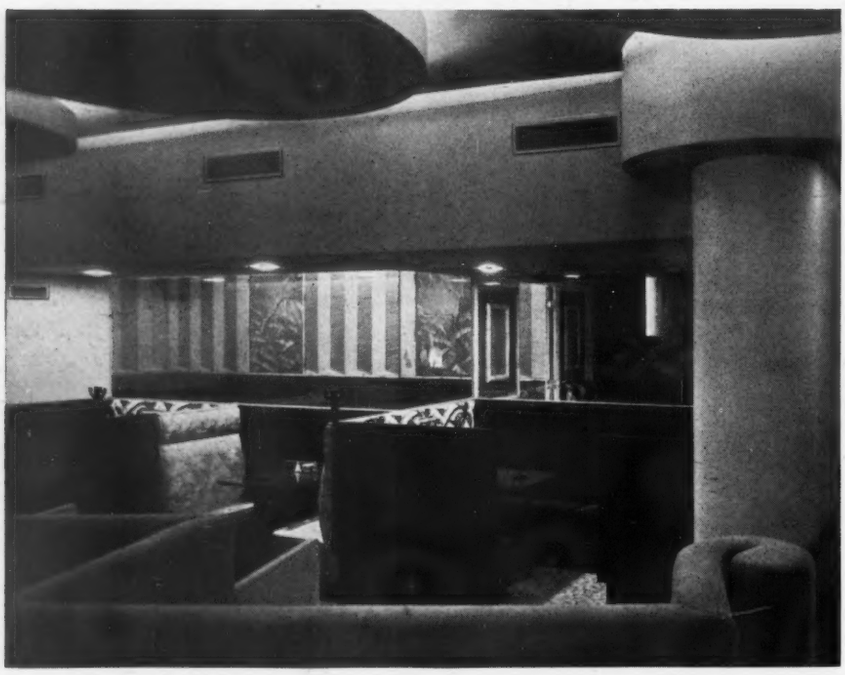
Alternate open strips between the apartment rows are used as combination garden and play areas. Parking and a great number of the garages are adjacent to entrances. The subway and bus stations of the adjacent streets, as well as shops and community facilities, may be reached from any of the apartments without crossing automobile traffic. The shops are placed along First Avenue, which is the main direction of access.

The "Stuyvesant Six," which increases the openness of the "Variation," also indicates a community building and a school for 1200 younger children, adjacent to a four-acre park. The park, the auditorium, and the gymnasium are for use by the adults as well as the children of the community. For many reasons it would be, I believe, not only socially just but economically sound to provide these community facilities. A complex such as this, with its 20,000 to 25,000 people, should represent an element of the metropolis dependent on its surroundings only for its traffic lanes, civic administration, and job possibilities.

Economics:

Computations based on the same assumptions show that the "Variation" would require a rent 2.9% higher than the Corporation's project, coinciding pretty exactly with the costs of the balconies. This means that, for instance, a $42 a month Corporation apartment would have to bring $43.12 on the "Variation's" standard, offering for this difference in rent not only the balconies but cross ventilation, privacy of windows, more storage space and closets, greater openness between the blocks, garages and parking facilities next to the entrances, gardens, play areas and walks apart from traffic.

The "Stuyvesant Six" with its optimum distances, its school and community facilities, its increased parks and playgrounds would increase the rent by 7%, or raise a $42 monthly rent to $44.94. I think it is worth while to the tenants, and it seems essential for a long term investment from the Corporation's and municipality's point of view.



BARBER-COLMAN

THE ZOMBIE ROOM
DE GEORGES RESTAURANT
DALLAS, TEXAS

The picture shows one section in which four Barber-Colman UNI-FLO Grilles Appear. Careful engineering achieved highly satisfactory results on a difficult job. Contractor: Dallas Air Conditioning Company, Dallas, Texas.

uni-flo
GRILLES and REGISTERS
for GUARANTEED
AIR DISTRIBUTION

Data based on complete tests enable us to recommend exactly the right outlet for any condition and GUARANTEE results. You are assured of uniform, properly diffused air of the desired temperature at specified level, with required air movement and elimination of hot, cold, or drafty areas. For further details, see your Barber-Colman representative.

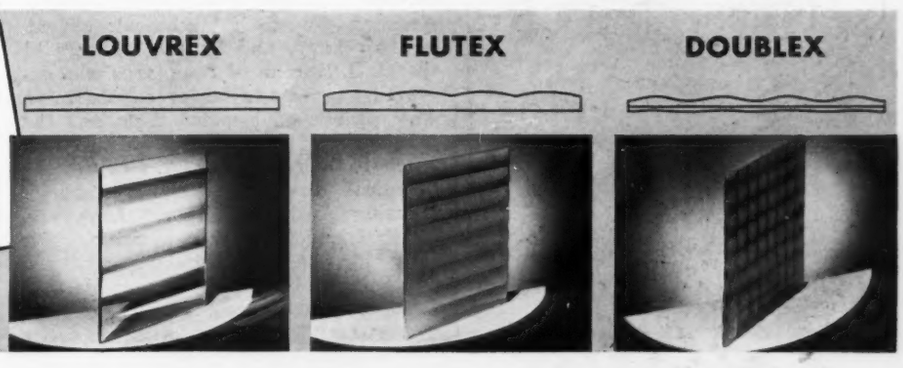
ENGINEERED uni-flo GRILLES AND REGISTERS AIR DISTRIBUTION

BARBER-COLMAN COMPANY
1230 ROCK STREET • ROCKFORD, ILLINOIS

SMART MERCHANDISERS BID FOR CUSTOMERS WITH *Decorative Glass*

Blue Ridge Decorative Glasses can be used with result-getting effects where increased store traffic and satisfied customers are important. In both new construction and modernization, architects and designers can utilize the wide variety of distinctive Blue Ridge patterns to create striking attention-getting interiors or light-giving smartness for both utility and decoration. These glasses are made by the Blue Ridge Glass Corporation of Kingsport, Tennessee, and sold through leading glass distributors by Libbey·Owens·Ford. For information write Blue Ridge Sales Division, Libbey·Owens·Ford Glass Company, 6564 Nicholas Building, Toledo 3, Ohio.

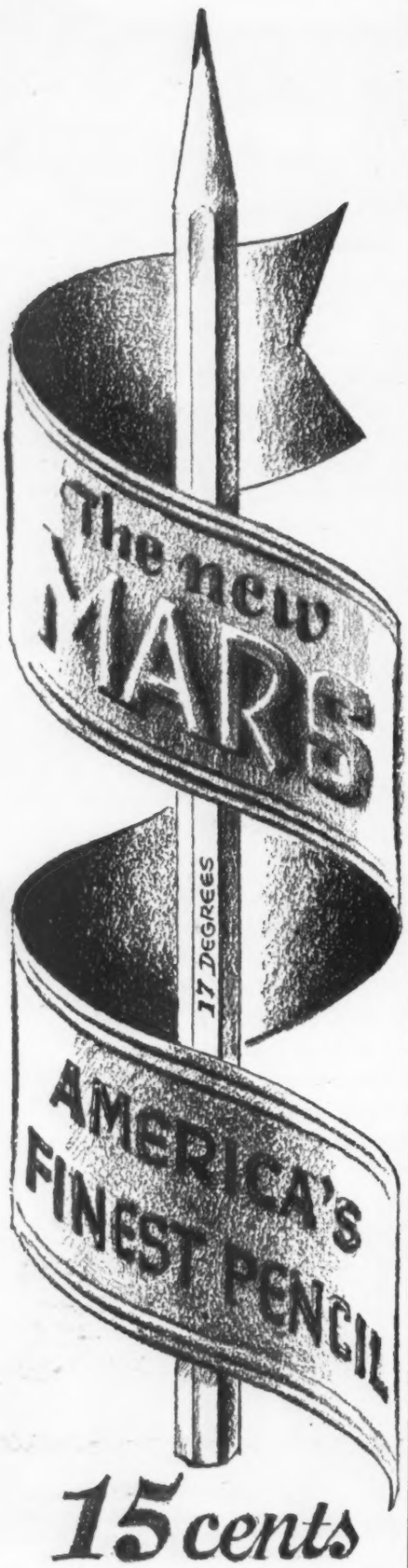
REMEMBER THE "3 EX's"



L O F BLUE RIDGE *Decorative* GLASS

FOR SOFT, DIFFUSED LIGHT · SMART DECORATION · COMPLETE PRIVACY

BLUE RIDGE GLASS CORP. KINGSPORT, TENN. MANUFACTURERS OF QUALITY GLASS



15 cents

J·S·STAEDTLER·INC·NEW YORK

NATIONAL DISTRIBUTORS:
KEUFFEL & ESSER CO.
NEW YORK

HEATER

(Continued from page 86)

ment the radiation from the glazed surfaces. This helped to keep the surface temperature of the tiles from becoming unbearably hot.

Two hundred and ninety-six ceramic heaters of this type were constructed at the Broadhead Manor project. This mass operation may have somewhat offset the additional costs rising out of the workmen's unfamiliarity with certain details of the unit so that the actual cost of the finished heating system ($236.50 each) can be considered quite reliable for any locality. These costs include the normally separate cost of the chimney ($70.00) which in our units is integral with the heating unit itself. It also includes the construction costs ($64.00) of the wing partition (4 feet long, 8 feet high) extending from the heater between kitchen and living room.

The estimated efficiency of the unit, as the result of the Bureau of Standards test, was more than 60%. The temperature rise in the test period was 5¾ degrees Fahrenheit per hour. In this test the unit was fired from an initial temperature of approximately 34 degrees up to the normal healthful range of room temperatures. Once its mass is heated, the temperature of the unit will not again sink to 34 degrees but will maintain comfortable living temperatures with the fire banked overnight.

Altogether two experiments were carried out, each tested by the U. S. Bureau of Standards, before we arrived at the final design on which the actual execution of the ceramic tile space heater at Broadhead Manor is based. A number of units were used through this last winter, and complete satisfaction regarding their appearance and performance was expressed by all the tenants who enjoyed them.

Our studies and experiments from their start to the final design were encouraged by the interest which the Technical Division of FPHA, through its former director, A. C. Shire, and his successor, Gilbert L. Rodier, took in our venture. Assisted by their technical expert, Nathan Levy, and by the advisers of the U. S. Bureau of Standards who executed the tests, a happy collaboration was established between them and the architects of the project, Mitchell & Ritchey, their engineer, A. Dzubay, the technical director of the Pittsburgh Housing Authority, Robert Law, and his staff, and myself as consulting architect. Thanks to the initiative of the Administrator, Dr. B. J. Hovde, we were able to carry through from his first instigation of such research to its successful solution.

Reprints of two articles by Catherine Bauer, *Planning is Politics . . . but . . . Are Planners Politicians?* and *Toward A Green and Pleasant England?* (March and April 1944 PENCIL POINTS), are available at 15 cents a copy.

Any way
you look at it

. . . Arkwright
Tracing Cloths
are *TOPS!*

With Engineers, Arkwright Tracing Cloths are TOPS because they reproduce details clearly and sharply – making blueprints easy to read. With Draftsmen, it's the ease with which they take ink or pencil . . . their matchless transparency. Combine these two judgments, and you see that *any* way you look at it, Arkwright Tracing Cloths are *tops*. Try them!

Arkwright Finishing Company
Providence, R. I.

Arkwright
TRACING CLOTHS
AMERICA'S STANDARD FOR OVER 20 YEARS

An Architect's Evaluation

of heating large residential structures with OIL BURNING SYSTEMS

Rosario Candela, New York architect, is known for many outstanding apartment buildings. He has had extensive experience with the use of oil for heating and his comments on postwar construction and the part that oil will play are of unusual interest.

"The advantages of liquid fuels are manifold and its use will probably be more widely adopted in postwar building than in prewar days. I have found that oil heating renders comfort and convenience to the occupants of a building, thereby resulting in an environment that attracts trade and pleases tenants. I have often used the Petro System and in my experience it possesses utmost efficiency and low operating costs. Clients are well satisfied with its performance."

Architects' and Engineers' opinions expressed in this series in recent years have reflected the satisfactory performance of Petro equipment in large structures and with heavy fuel oils.

Current thought and planning for post-war construction includes a large volume of construction of smaller residential and commercial structures. In this field Petro Domestic Oil Burners for light fuel oils have more than twenty years of performance records equaling those of the larger Petro Systems.

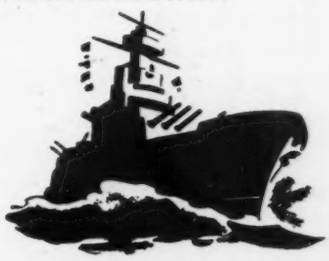
Many of those burners installed twenty years ago are still satisfying their owners who consistently refuse "trade in" offers even now. Many of the burner labels read "Nokol"—or "Petro-Nokol"—but their service records are the important thing, since they were all designed and made by the same organization which produces today's Petro.

Heating capacity ratings run from 200 to 6,300 sq. ft. (steam E.D.R.)—from 1 to 18 gallons of light oil per hour. Burners are available for efficient operation in most of the widely used heating boilers and furnaces in that capacity range. In addition, Petro offers complete, integrally designed units of boiler (or furnace) and burner, and complete domestic water heating units.

In the years before Pearl Harbor, heating contractors in the residential field ranked Petro Domestic Burners "tops". Owners reported operating satisfaction equal to that delivered by the larger, Industrial type, systems. The post-war Petro's will be even better.

OIL IS AMMUNITION USE IT WISELY

Full data on Petro Industrial Burners are in Sweet's—or Domestic Engineering — catalog files. Details on Petro Domestic burners available in separate catalog. Copy of either sent gladly on request.



INDUSTRIAL MODELS

#5 or #6 fuel oil—manual, semi- or automatic operation — 8 sizes to 450 bhp. "Thermal Viscosity" preheating.

PETRO
Cuts Steam Costs

DOMESTIC MODELS

#3 or lighter oils—"conversion" and combination-unit types—7 sizes "Tubular Atomization" (patented)

PETROLEUM HEAT AND POWER COMPANY

STAMFORD — *Makers of good Old Burning Equipment since 1903* — CONNECTICUT

"Zoned Heating Solved Our Problem"

"Before we installed our new Steam Heating System, discomforts and distractions due to incorrect heating were seriously affecting the efficiency and health of our workers. Our drafting rooms, requiring north light, were too cold . . . Our offices and conference room, on the south side of the building, were too hot . . .

"We chose a Zoned Webster Moderator System of Steam Heating to solve our problem. Now we have correct heat in every department. And we use less fuel!"

The Webster Moderator System supplies continuous distribution of steam. Through accurate orificing, all radiators receive steam at the same time but in varied quantities, as needed. An Outdoor Thermostat automatically changes the heating rate to agree with changes in outdoor temperatures.

More Heat with Less Fuel

Seven out of ten buildings in America (many less than ten years old) can get up to 33 per cent more heat from the fuel consumed. This is the result found from thousands of building surveys made by Webster Engineers.

Write for "Performance Facts" if you are dissatisfied with your present steam heating system. This free booklet contains case studies of 268 modern steam heating installations in commercial, industrial and institutional buildings . . . and the savings they are effecting. Address Dept. PP-6.

WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Representatives in principal Cities : : Est. 1888

Outdoor thermostat automatically changes heating rate when outdoor temperature changes.

ARMY E NAVY Making Boosters for U.S. Army Ordnance

Webster Steam Heating

FHA Commissioner Abner H. Ferguson announces that more than 300,000 American families financed essential home repair and maintenance work in 1943 with Title I funds advanced by private financial institutions and insured by the FHA.

Of the total, 85.3% were for single-family dwellings, 8.5% for 2 or more family dwellings, 3.7% for farm homes and buildings, 2.5% for commercial, industrial, etc. Percentages of loan purposes: 29.8% for exterior painting; 16.9% for roofing; 13.1% for heating and plumbing; 6.8% for interior finish; 21.5% for miscellaneous.

Samuel G. Hibben, director of applied lighting for Westinghouse Lamp Division, forecasts benefits to postwar American homes, factories, and public buildings from advanced lighting techniques:

Displays of artificial light and actual scenes by means of television; ultra-violet radiations to lessen disease spread by killing bacteria and viruses in the air we breathe; by preventing formation of mold and decay in foods; by providing sun-tan and health-giving radiations while we sleep; providing year-round plant growth by artificial light; general heating by means of infra-red heat lamps.

Lectures

A series of 4 lectures on *Problems of Post-War Planning* is offered by the Museum of Modern Art in New York City from May 24 through June 14, on Wednesday evenings. Because the Museum believes that at the present time the most active phase of contemporary design is concerned with large-scale planning, and that *all* citizens should participate for effective organization of our local and national resources, the following program has been arranged: May 24, *Planning for New York City,* a forum discussion on postwar planning for New York City, with speakers representing different points of view. Chairman: George Howe. Speakers: Clarence Stein, Charles Abrams, Joseph Hudnut, Siegfried Giedion, Cleveland Rodgers, Mrs. Mary K. Simkhovitch.

May 31, *The City, Region and Nation;* "The Planning Function in a Democracy" by John Merriman Gaus, Professor of Political Science, University of Wisconsin, Consultant, National Resources Planning Board and TVA.

June 7, *City Planning & Government;* "The Role of Government in Planning Housing" by John Ihlder, of the National Capital Housing Authority.

June 14, *City Planning and the New Architecture;* "The Relation of Structures to the City Plan" by Joseph Hudnut, Dean of the Graduate School of Design, Harvard University.

Series tickets are available to both the public and members, at the Museum, 11 West 53rd Street, New York 19, N. Y.

Competitions

Frank Menendez of San Juan, Puerto Rico, a junior at the Columbia University School of Architecture, has been awarded the 12th annual Sherman prize in architecture. Menendez plans to return to Puerto Rico after the war to design offices and public buildings.

News

(Continued from page 114)

Scholarships

Ten winners of the 1944 George Westinghouse engineering scholarships, valued at $1,850, have been awarded to high school seniors chosen from 44 states and District of Columbia. The Scholarships, keyed to accelerated wartime curricula at the College of Engineering, Carnegie Institute of Technology, permit qualification for a degree in 32 months of intensive study, beginning June 5. Scholarships for those who enter the armed services will be held until they return.

N. Y. Chapter A.I.A. announces the award of its Arnold W. Brunner Scholarship for 1944 to Simon Breines, A.I.A., N. Y. City architect, for his proposed "City Living." The proposal for which the scholarship funds will be used is made to acquaint the largest number of people with the concrete gains to be realized through planning and make processes and objectives of planning more intelligible to the public, stressing that architects as professionals are intensely concerned in the well-being of their fellow citizens.

Exhibitions

On May 28th at the Metropolitan Museum of Art in New York City will be the grand re-opening of 27 galleries of paintings which form the panorama of the great periods of European painting from Italian primitives through the French Impressionists.

The historical development of housing in America, England, and Europe, from 16th century beginnings to current times, is shown in an exhibition (through June 7th) of books, photographs, and architectural plans in Avery Architectural Library at Columbia University in N. Y. City.

Chicago Institute of Design

The School of Design in Chicago has become the Institute of Design recently, with L. Moholy-Nagy continuing as president of the Institute. The summer session of 6 weeks begins June 26 and, among others, offers courses in Basic and Product Design, Visual Fundamentals, Architectural and Interior Design, Prefabrication, Mechanical Drafting, Blueprint Reading, Production Illustration, Photography, Display. A children's summer art camp and junior workshop will be held for the first time on the Institute's farm at Somonauk, Illinois.